

Our ref: 13-11-2023

13-11-2023

By hand

Environmental Protection Department  
Environmental Assessment Division  
Territory North Group  
Sheung Shui, Fanling, Tai Po  
27th floor, Southorn Centre,  
130 Hennessy Road,  
Wan Chai, Hong Kong  
(Attn: Mr. LYN Wing Chung, Alex)

Dear Mr. Lyn,

**Provision of Environmental Team consultancy for Design and Construction of Kong Nga Po Police Training Facilities (Programme no. 279LP) Quotation No. PMB202/8480/2022/A01/A**  
**Submission of monthly EM&A report in October 2023**

We refer to the Environmental Permit (EP) No. FEP-01/510/2016 for the captioned project.

Pursuant to Condition 3.3 of the No. FEP-01/510/2016, please find enclosed four hard copies and one electronic copy of the monthly EM&A report in October 2023, which has been verified by the IEC for your reference.

Thank you very much for your attention and please feel free to contact Mr. Lee at 9382 4204 should you require further information.

Yours faithfully,

For and on behalf of  
Ka Shing Management Consultant Limited

Applied Knowledge Center Limited  
Company Secretary

Encl. monthly EM&A report in October 2023

Date: 10 October 2023  
Your ref:  
Our ref: PL-202311001

Architectural Services Department  
40/F, Queensway Government offices  
66 Queensway, Hong Kong

**Attn: Mr. Vincent Kwok**

Dear Mr. Kwok,

**Re: Contract No. SS K/509**  
**Provision of Independent Environmental Checker Consultancy for Design**  
**and Construction of Kong Nga Po Police Training Facilities**  
**Verification of Monthly EM&A Report (October 2023)**

Reference is made to the Monthly EM&A report (October 2023) provided by ET via email on 6 November 2023 and subsequent revision submitted on 9 November 2023.

Please be informed that we have no adverse comments on the revised Monthly EM&A report (October 2023). We hereby verify the submission is in accordance with Condition 3.4 of Environmental Permit No. FEP-01/510/2016.

Thank you for your attention.

Yours sincerely,  
For and on behalf of  
Acuity Sustainability Consulting Limited



Ir Y.H. LAW  
Independent Environmental Checker

c.c. Ka Shing Management Consultancy Ltd.

**Provision of Environmental Team consultancy  
for Design and Construction of Kong Nga Po Police  
Training Facilities (Programme No. 279LP)**

**Monthly Environmental Monitoring and  
Audit Report for October 2023  
(Version 1)**

REMARKS:

The information supplied and contained within this report is, to the best of our knowledge, correct at the time of printing.

Ka Shing accepts no responsibility for changes made to this report by third parties.

**Ka Shing Management Consultancy Ltd. [www.ka-shign.net](http://www.ka-shign.net)  
Unit 2, 13/F Kai Yue Commercial Building, 2C Argyle St,  
Mong Kok, Kowloon**

Our ref: 09-11-2023

09-11-2023

By email: kwokhw@archsd.gov.hk

Architectural Services Department  
40/F, High Block, Queensway Government Offices,  
66 Queensway, Hong Kong  
(Attn: Mr. Vincent Kwok)

Dear Mr. Kwok,

**Re: Quotation No. PMB202/8480/2022/A01/A**  
**Provision of Environmental Team consultancy for Design and Construction of Kong Nga Po**  
**Police Training Facilities (Programme no. 279LP)**  
**-Submission of the monthly EM&A report in October 2023**

We refer to the Environmental Permit No. FEP-01/510/2016 for the captioned project.

Subject to the accuracy and authenticity of all the information provided to us, we hereby certify, in accordance with Conditions 3.4 of Environmental Permit No. FEP-01/510/2016, that the information is a representation of what it signifies.

Thank you very much for your attention and please feel free to contact Mr. Lee at 9382 4204 should you require further information.

Yours faithfully,

For and on behalf of  
Ka Shing Management Consultant Limited



Mr. W. H. Lee  
Environmental Team Leader



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## EXECUTIVE SUMMARY

### Introduction

1. This is the 7th monthly Environmental Monitoring and Audit (EM&A) Report for the Project of Police Facilities in Kong Nga Po under Environmental Permit No. FEP-01/510/2016. This report was prepared by Ka Shing Management Consultancy Ltd. (Ka Shing) under “Service Contract Quotation No. PMB202/8480/2022/A01/A Provision of Environmental Team consultancy for Design and Construction of Kong Nga Po Police Training Facilities” (hereinafter called the “Service Contract”). This report documents the findings of Environmental Monitoring and Audit (EM&A) work conducted from 1st to 31st October 2023.
2. Part of the construction site was handed over to Architectural Services Department (ArchSD) on 23rd December 2022 whom taken over responsibility for the construction of building works and as maintenance agent for Hong Kong Police Force (HKPF) during operation phase.
3. During the reporting month, the following Works Contracts were undertaken for the Project of Police Facilities in Kong Nga Po under Environmental Permit No. FEP-01/510/2016: Contract No. SSK509 - Design and Construction of Kong Nga Po Police Training Facilities

### Environmental Monitoring and Audit Progress

4. A summary of the EM&A activities in this reporting month is listed in **Table I** below:

**Table I Summary Table for EM&A Activities in the Reporting Month**

EM&A Activities	Date
Air Quality Monitoring	04, 10, 16, 19, 25, 31 October 2023
Noise Monitoring	04, 10, 16, 25, 31 October 2023
Ecological Monitoring	25 October 2023
Environmental Site Inspection	3, 10, 18, 24, 31 October 2023
landscape & Visual Inspection and the Ecological Monitoring	3, 18, 31 October 2023

### Breaches of Action and Limit Levels

5. Summary of the environmental exceedances of the reporting month is tabulated in Table II.

#### Air Quality

6. All construction air quality monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

#### Construction Noise

7. All construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded.

**Table II Summary Table for Events Recorded in the Reporting Month**

Environmental Monitoring	Parameter	No. of Non-Project related Exceedances		No. of Exceedance related to the Construction Works of the Contract		Action Taken
		Action Level	Limit Level	Action Level	Limit Level	
Air Quality	1-hr TSP	0	0	0	0	N/A
Noise	L <sub>eq</sub> (30min)	0	0	0	0	N/A

**Ecological Monitoring**

8. All ecological monitoring was conducted as scheduled in the reporting month. The ecological monitoring result in the reporting month is shown in **Appendix H**.

**Environmental Non-Compliance**

9. No environmental non-compliance was recorded in the reporting month

**Environmental Complaint**

10. No environmental complaint was received in the reporting month.

**Notification of Summons and Successful Prosecutions**

11. No notification of summons or successful prosecutions was received in the reporting month.

**Reporting Changes**

12. A portion of the construction site was transferred to the Architectural Services Department (ArchSD) on December 23rd 2022. ArchSD assumes responsibility for the construction of the building works. The site activities and implementation status of environmental mitigation measures related to ArchSD Contract are presented in this Monthly EM&A Report.

**Future Key Issues**

13. The major site activities for the coming three months include:
- Open cut excavation
  - Removal of soil
  - Construction of footings
  - Pre-bored socketed-H Piling
  - Mock up construction
  - U.U. Lead in and Pipe Duct Connection
14. Potential environmental impacts arising from the above construction activities are mainly associated with construction dust, noise, water quality and waste management. For the details, please refer to **Appendix A** regarding the anticipated major impacts from the construction works and corresponding recommended mitigation measures.

## 1 INTRODUCTION

- 1.1 Ka Shing Management Consultancy Ltd. (Ka Shing) was commissioned by the Architectural Services Department (ASD) as the Environmental Team to undertake the Environmental Monitoring and Audit (EM&A) works for the Project of Police Facilities in Kong Nga Po under Environmental Permit No. FEP-01/510/2016 to ensure that the environmental performance of the Works Contracts comply with the requirements specified in the Environmental Permits (EPs), Environmental Impact Assessment (EIA) Report and Environmental Monitoring & Audit (EM&A) Manual of the Police Facilities in Kong Nga Po Project and other relevant statutory requirements.
- 1.2 The major construction works for the Project commenced on 3rd July 2020 and the main site in Kong Nga Po was handed over to Architectural Services Department (ASD) on 23rd December 2022 whom taken over responsibility for the construction of building works and as maintenance agent for Hong Kong Police Force (HKPF) during operation phase.

### **Purpose of the report**

- 1.3 This is the 7th EM&A Report which summarises the impact monitoring results and audit findings for the EM&A programme during the reporting period from 1st to 31st October 2023.

### **Structure of the report**

- 1.4 The structure of the report is as follows:

Section 1: Introduction - purpose and structure of the report.

Section 2: Project Information – summarises background and scope of the Project, site description, project organisation and contact details, construction programme, the construction works undertaken and the status of Environmental Permits/Licences during the reporting month.

Section 3: Air Quality Monitoring – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequencies, monitoring locations, Action and Limit Levels, monitoring results and Event /Action Plans.

Section 4: Noise Monitoring – summarises the monitoring parameters, monitoring programmes, monitoring methodologies, monitoring frequencies, monitoring locations, Action and Limit Levels, monitoring results and Event/Action Plans.

Section 5: Ecological Monitoring – summarises the monitoring results of the monthly ecological monitoring undertaken within the reporting month.

Section 6: Landscape and Visual Monitoring – summarises the audit results of the site inspection undertaken within the reporting month.

Section 7: Environmental Site Inspection – summarises the audit findings of the weekly site inspections undertaken within the reporting month.

Section 8: Environmental Non-conformance – summarises any monitoring exceedance, environmental complaints, environmental summons and successful prosecutions within the reporting month.

Section 9: Future Key Issues – summarises the impact forecast for the next three months and monitoring schedule in the next month.

Section 10: Conclusions and Recommendations

## 2 PROJECT INFORMATION

### Background

- 2.1 The Project mainly includes construction and operation of various police facilities. The police facilities include:
- (i) a helipad;
  - (ii) two firing ranges; and
  - (iii) other facilities, associated infrastructure & utilities, etc.
- 2.2 The Project is a Designated Project under the Environmental Impact Assessment Ordinance (EIAO). An Environmental Impact Assessment (EIA) Report (Report No.: AEIAR-201/2016) for the Project was approved under EIAO in October 2016 in accordance with the EIA Study Brief (No. ESB-276/2014) and the Technical Memorandum on Environmental Impact Assessment Process (EIAO-TM). The corresponding Environmental Permit was issued (EP no.: FEP-01/510/2016) by the Director of Environmental Protection (DEP).
- 2.3 According to an approved Environmental Monitoring and Audit (EM&A) Manual, an air quality and noise monitoring programme is recommended during the construction phases of the Project to monitor the expected dust and noise nuisances. Baseline air quality and noise monitoring were conducted by previous ET (Wellab Limited) from 14th March 2020 to 2nd April 2020 to establish the background conditions of the designated sensitive receivers prior to the commencement of the Project's construction works.
- 2.4 The site layout plan for the Project is shown in **Figure 1**.

### Project Organization

- 2.5 Different parties with different levels of involvement in the Project organization under EP no.: FEP-01/510/2016 include:
- Project Proponent – Architectural Services Department (ArchSD)
  - Contractor– China State JV
  - Environmental Team (ET) – Ka Shing Management Consultancy Ltd.
  - Independent Environmental Checker (IEC) – Acuity Sustainability Consulting Limited
- 2.6 The key personnel contact names and numbers under Quotation No. PMB202/8480/2022/A01/A and the other contact names and numbers under ArchSD Contract No. SSK509 are summarised in Table 2.1.

Table 2.1 Key Contacts of the Project

Party	Role	Contact Person	Phone No.	Fax No.
Architectural Services Department	Project Proponent	Mr. Vincent Kwok	2867 3939	3542 5223



Contractor (China State JV)	Site Agent	Mr. Kelvin Chan	6272 8828	2866 6325
	Senior Environmental Officer	Ms. Marian Kong	6174 9735	2866 6325
Ka Shing Management Consultancy Ltd.	ETL	Mr. W.H. Lee	2618 2166	2120 7752
Acuity Sustainability Consulting Limited	IEC	Ir. Y.H. Law	2698 6833	2698 9383

### Summary of Construction Works Undertaken During Reporting Month

2.7 The major site activities undertaken in the reporting month included:

- Open cut excavation
- Plate load test
- Laying blinding layer
- Removal of soil
- Ground Investigation
- Pre-bored socketed-H Piling

### Construction Programme

2.8 A copy of the Contractors' construction programmes is provided in Appendix A. We have considered the major site activities for the upcoming three months as provided by the Contractor. The potential severity of the forthcoming environmental impacts and the use of machinery are recognized and detailed in **Appendix O**. This appendix also provides the Contractor with advice and considerations regarding possible alternative methods aimed at environmental improvement, awareness, and enhancement matters on site.

2.9 A summary of the relevant permits, licences, and/or notifications on environmental protection for this Project is presented in Table 2.2

Table 2.2 Status of Environmental Licences, Notifications and Permits

Permit / Licence No.	Valid Period		Status
	From	To	
<b>Further Environmental Permit (FEP)</b>			
FEP-01/510/2016	N/A	N/A	Valid
<b>Construction Noise Permit (CNP)</b>			
GW-RN0692-23	23-09-2023	19-12-2023	Valid
<b>Notification pursuant to Air Pollution Control (Construction Dust) Regulation</b>			
EPD Ref no.: 487864	N/A	N/A	N/A
<b>Billing Account for Construction Waste Disposal</b>			
Account No. 7046289	18-01-2023	N/A	Valid
<b>Registration of Chemical Waste Producer</b>			

WPN5213-641-C4770-01	18-01-2023	N/A	Valid
<b>Effluent Discharge Licence under Water Pollution Control Ordinance</b>			
WT00043663-2023	21-04-2023	30-04-2028	Valid

### Summary of EM&A Requirement

2.10 The EM&A programme requires construction noise monitoring, air quality monitoring, ecological monitoring and environmental site audits. The EM&A requirements are described in the following sections, including:

- All monitoring parameters;
- Action and Limit levels for all environmental parameters;
- Event / Action Plans;
- Environmental mitigation measures, as recommended in the Project EIA study final report; and
- Environmental requirements in contract documents.

### Status of Compliance with Environmental Permits Conditions

2.11 The status of compliance with Environmental Permit (EP) No. FEP-01/510/2016 and required submission related to this Project under the EP is summarized in **Table 2.3**:

Table 2.3 Summary Table for Status of Compliance / Required Submission under FEP No. FEP-01/510/2016

EP Conditions	Submission	Submission Date	Approval Status
1.12	Commencement date of construction of the Project	30/3/2023	*
2.7	Proposal on the Reporting Mechanism and Curriculum Vitae of the IEC	20/3/2023	*
2.10	The date of setting up the Community Liaison Hotline and the contact details	27/2/2023	*
2.11	Management Organization of Main Construction Companies, at least an organization chart, names of responsible persons and their contact details	10/3/2023	*
2.12	Construction Works Schedule and Location Plans	10/3/2023	*
2.13	Layout plan for permeable pavings	29/3/2023	For approval
2.14	Landscape and visual mitigation plan	26/6/2023	For approval
2.16	Plan for perimeter walls/ boundary wall sat project site and sidewalls of firing range	1 month before fence wall works	For approval

2.19	Submission of Helicopter Flight Plan	1 month before commencement of operation of Helipad	Notification
3.3	Baseline Air Quality and Noise Monitoring Report	30/3/2023	Deposit
4.2	Internet address of a dedicated web site	13/4/2023	*

Remarks: \* Approval not required in FEP-01/510/2016

### 3 AIR QUALITY MONITORING

#### Monitoring Requirements

- 3.1 In accordance with the EM&A Manual, impact 1-hour TSP monitoring was conducted to monitor the air quality for the Works Contracts. **Appendix B** shows the established Action/Limit Levels for the air quality monitoring works.
- 3.2 Impact 1-hour TSP monitoring was conducted for at least three times every 6 day at one air quality monitoring station.

#### Monitoring Location

- 3.3 According to Section 2.2.5 of the EM&A Manual, impact air quality monitoring was conducted at the two designated monitoring stations for the Project as shown in Figure 2. Table 3.1 describes the location of the air quality monitoring stations.

Table 3.1 Location for Air Quality Monitoring Stations

Monitoring Station	Location of Measurement
AM1	Village House, Kong Nga Po
AM2	Village House, Kong Nga Po

#### Monitoring Equipment

- 3.4 As the setup of HVS for 1-hour TSP monitoring at the designated locations and request for secured supply of electricity for HVS were not allowed by the villager, direct reading dust meters was therefore used to carry out the 1-hour TSP monitoring. Dust meter has been commonly used for measuring 1-hour TSP levels in a number of designated projects of major infrastructure works. The proposed use of direct reading dust meter was submitted to IEC and agreed by the IEC. With the use of direct reading dust meter, it can allow prompt and direct results for the EM&A reporting and the implementation of the event and action plan. The 1-hour sampling was determined on bi-monthly basis by the HVS to check the validity and accuracy of the results measured by direct reading method.
- 3.5 **Table 3.2** summarises the equipment used in the impact air quality monitoring programme. Copies of calibration certificates are attached in **Appendix C**.

Table 3.2 Air Quality Monitoring Equipment

Equipment	Model and Make	Quantity
Dust Monitor	SIBATA (LD-3B)	2

3.6 Meteorological information was extracted from “Hong Kong Observatory - General Weather Conditions during the Monitoring Period (October 2023)” in **Appendix G** as the alternative method to obtain representative wind data.

3.7 The weather conditions (i.e. sunny, cloudy or rainy) were recorded by the field staff as well during the monitoring days.

### **Monitoring Parameters, Frequency and Duration**

3.8 **Table 3.3** summarises the monitoring parameters and frequencies of impact dust monitoring during the Works Contracts activities. The air quality monitoring schedule for the reporting month is shown in **Appendix D**.

Table 3.3 Impact Dust Monitoring Parameters, Frequency and Duration

<b>Parameters</b>	<b>Frequency</b>
1-hr TSP	Three times/ 6 days

### **Monitoring Methodology and QA/QC Procedure**

#### **1-hour TSP Air Quality Monitoring**

##### *Instrumentation*

3.9 Direct reading dust meter was deployed for the air quality monitoring as shown in **Table 3.2**.

3.10 The measuring procedures of the dust meter are in accordance with the Manufacturer’s Instruction Manual as follows:

- When the Model LD-3B is turned on, the set time displayed at the bottom left of the liquid crystal display is [01 min].
- When the start/stop switch is pressed once at this time, a measurement of 1 minute is taken. The length of the measurement will depend on the time that is set and displayed.
- A down timer is displayed at the bottom right of the liquid crystal display

##### *Maintenance/Calibration*

3.11 The following maintenance/calibration was required for the direct dust meters:

- Check and calibrate the dust meter by High Volume Sampler (HVS) to check the validity and accuracy of the results measured by direct reading method. Calibration of dust meter

should be carried out on a bi-monthly basis throughout all stages of the air quality monitoring.

- The correlation of dust meter and HVS in TSP measurement was obtained by direct comparison of the weight of dust particle trapped in a filter paper using HVS with the reading of the dust meter. Calibration of the dust meter with HVS should be powered on and off at the same location and the same time.
- The correlation coefficient was checked to establish the correlation relationship between the dust meter and HVS. The correlation factor was determined by comparing the results of HVS and dust meter.
- Checking is made prior to dust monitoring commencing to ensure all equipment is in good working condition with necessary power supply. Zero count test were conducted before and after each monitoring event.

## Results and Observations

3.12 The monitoring results for 1-hour TSP monitoring are summarised in **Table 3.4**. Detailed monitoring results and graphical presentations of 1-hour TSP monitoring results are shown in **Appendix E**.

Table 3.4 Summary Table of 1-hour TSP Monitoring Results during the Reporting Month

Monitoring Station	Concentration ( $\mu\text{g}/\text{m}^3$ )		Action Level, $\mu\text{g}/\text{m}^3$	Limit Level, $\mu\text{g}/\text{m}^3$
	Average	Range		
AM1	59	45 – 71	308	500
AM2	73	61 – 82	311	

3.13 1-hour TSP monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedances were recorded.

3.14 According to our field observations, the major dust source identified at the designated air quality monitoring stations in the reporting month are shown in **Table 3.5**

Table 3.5 Observation at Dust Monitoring Stations

Monitoring Station	Major Dust Source
AM1	Road traffic, exposed site area, site vehicle / equipment operation and movement
AM2	Road traffic, exposed site area, site vehicle / equipment operation and movement, vehicle / equipment operation and movement at warehouse nearby

### **Event and Action Plan**

- 3.15 Should project-related non-compliance of the criteria occur, action in accordance with the Event Action Plan in **Appendix I** shall be carried out.

## 4 NOISE MONITORING

### Monitoring Requirements

4.1 In accordance with EM&A Manual, construction noise monitoring was conducted in terms of the A-weighted equivalent continuous sound pressure level (Leq) to monitor the construction noise arising from the construction activities. The regular monitoring frequency for each monitoring station shall be on a weekly basis and one set of measurements between 0700 and 1900 hours on normal weekdays shall be conducted. **Appendix B** shows the established Action/Limit Levels for the environmental monitoring works.

### Monitoring Location

4.2 According to Section 3.2.3 of the EM&A Manual, impact noise monitoring was conducted at fourteen designated noise monitoring stations. With reference to the principle of EIA report of the Project, noise monitoring station within 300 m from the boundary of this Project are considered. In such regard, six noise monitoring stations as shown in **Figure 3** as relevant monitoring locations. Table 4.1 describes the locations of the noise monitoring stations.

Table 4.1 Location of Noise Monitoring Stations

Monitoring Station	Location of Measurement
NM9	Village House, Kong Nga Po
NM10	Village House, Kong Nga Po
NM11	Village House, Kong Nga Po
NM12	Village House, Kong Nga Po
NM13	Village House, Kong Nga Po
NM14	Village House, near Man Kam To Road

### Monitoring Equipment

4.3 Integrating Sound Level Meters were used for impact noise monitoring. The meters were Type 1 sound level meter capable of giving a continuous readout of the noise level readings including equivalent continuous sound pressure level (Leq) and percentile sound pressure level (Lx) that also complied with International Electrotechnical Commission Publications 651:1979 (Type 1) and 804:1985 (Type 1) specifications. **Table 4.2** summarises the noise monitoring equipment being used. Copies of calibration certificates are attached in **Appendix C**.

Table 4.2 Noise Monitoring Equipment

Equipment	Model	Quantity
Sound Level Meter	RION NL-52	1
Sound Calibrator	RION NC-73	1



## Monitoring Parameters, Frequency and Duration

4.4 **Table 4.3** summarises the monitoring parameters, frequency and total duration of monitoring. The noise monitoring schedule is shown in **Appendix D**.

Table 4.3 Noise Monitoring Parameters, Duration and Frequency

Monitoring Stations	Parameter	Duration	Frequency	Measurement
NM9	L10(30 min.) dB(A) <sup>[2]</sup>	0700-1900 hrs on normal weekdays	Once per week	Free field <sup>[1]</sup>
NM10				Free field <sup>[1]</sup>
NM11	L90(30 min.) dB(A) <sup>[2]</sup>			Façade
NM12				Façade
NM13	Leq(30 min.) dB(A) <sup>[2]</sup>  (as six consecutive Leq, 5min readings)			Free field <sup>[1]</sup>
NM14				Free field <sup>[1]</sup>

Remarks:

[1]: Correction of +3dB (A) for Free-field Measurement.

[2]: A-weighted equivalent continuous sound pressure level (Leq). It is the constant noise level which, under a given situation and time period, contains the same acoustic energy as the actual time-varying noise level.

L10 is the level exceeded for 10% of the time. For 10% of the time, the sound or noise has a sound pressure level above L10.

L90 is the level exceeded for 90% of the time. For 90% of the time, the noise level is above this level.

## Monitoring Methodology and QA/QC Procedures

4.5 The monitoring procedures are as follows:

- The sound level meter was set on a tripod at a point 1m from the exterior of the noise sensitive facade and at the position of 1.2m above the ground;
- For free field measurement, the meter was positioned away from any nearby reflective surfaces. Free field noise levels were adjusted with a correction of +3 dB(A);
- The battery condition was checked to ensure the correct functioning of the meter;
- Parameters such as frequency weighting, the time weighting and the measurement time were set as follows:

—	frequency weighting	: A
—	time weighting	: Fast
—	time measurement	: Leq(30 min.) dB(A)

(as six consecutive Leq, 5min readings) during non-restricted hours (i.e. 0700-1900 hrs on normal weekdays)

- Prior to and after each noise measurement, the meter was calibrated using a Calibrator for 94.0 dB at 1000 Hz. If the difference in the calibration level before and after measurement was more

than 1.0 dB, the measurement would be considered invalid and repeat of noise measurement would be required after re- calibration or repair of the equipment;

- During the monitoring period, the Leq, L90 and L10 were recorded. In addition, site conditions and noise sources were recorded on a standard record sheet;
- Noise measurement was paused temporarily during periods of high intrusive noise (e.g. dog barking, helicopter noise) if possible and observation record during measurement period should be provided; and
- Noise monitoring was cancelled in the presence of fog, rain, and wind with a steady speed exceeding 5 m/s, or wind with gusts exceeding 10 m/s. The wind speed should be checked with a portable wind speed meter capable of measuring the wind speed in m/s.

### Maintenance and Calibration

4.6 The microphone head of the sound level meter and calibrator were cleaned with a soft cloth at quarterly intervals.

4.7 The sound level meter and calibrator were checked and calibrated at yearly intervals.

4.8 Immediately prior to and following each noise measurement, the accuracy of the sound level meter should be checked using an acoustic calibrator generating a known sound pressure level at a known frequency. Measurements would be accepted as valid only if the calibration levels before and after the noise measurement agreed to within 1.0 dB.

### Results and Observations

4.9 The noise monitoring results are summarised in Table 4.4. Detailed monitoring results and graphical presentations of noise monitoring are shown in **Appendix F**. The weather information for the reporting month is summarised in **Appendix G**.

Table 4.4 Summary Table of Noise Monitoring Results during the Reporting Month

Monitoring Station	Average	Range	Baseline Level	Limit Level
	Leq (30 min) dB(A)	Leq (30 min) dB(A)	dB(A)	dB(A)
NM9 <sup>[1]</sup>	57.9	54.5 – 61.9	55.9	75
NM10 <sup>[1]</sup>	52.5	50.2 – 57.1	52.8	
NM11	46.7	42.8 – 49.0	46.4	
NM12	49.2	46.9 – 50.9	54.7	
NM13 <sup>[1]</sup>	56.0	53.8 – 58.9	61.3	
NM14 <sup>[1]</sup>	46.7	43.7 – 49.4	59.6	

Remarks:

[1]: Correction of +3dB (A) for Free-field Measurement.

- 4.10 Construction noise monitoring was conducted as scheduled in the reporting month. No Action/Limit Level exceedance was recorded. The summary of exceedance record in reporting month is shown in **Appendix J**.
- 4.11 According to our field observations, the major noise sources identified at the designated noise monitoring stations in the reporting month are as follows:

Table 4.5 Observation at Noise Monitoring Stations

<b>Monitoring Station</b>	<b>Major Noise Source</b>
NM9	Road traffic, excavation works, loading & unloading
NM10	Road traffic, excavation works, loading & unloading
NM11	Road traffic
NM12	Road traffic, loading & unloading
NM13	Road traffic, loading & unloading
NM14	Road traffic, dog barking

#### **Event and Action Plan**

- 4.12 Should any project related to non-compliance of the criteria occur, action in accordance with the Event Action Plan in Appendix I shall be carried out.

## 5 ECOLOGICAL MONITORING

### Monitoring of Flora Species of Conservation Interest

- 5.1 As required under Section 8.3.2 of EM&A Manual, during construction phase, temporary protective fence shall be erected enclosing the flora species of conservation interest identified under the detailed vegetation survey. The temporary protective fence shall be properly maintained and monitored for the effectiveness. Monthly monitoring of individual of flora species of conservation interest identified in the detailed vegetation survey shall be conducted during the construction phase to make sure that the flora species of conservation interest are not affected by the construction activities of the Project.
- 5.2 The purpose of the monitoring is to monitor the timely implementation of proper environmental management practices and mitigation measures for the retained and transplanted individuals of flora species of conservation interest. Proper erection and maintenance of the temporary protective fence enclosing the individuals was inspected for the effectiveness. The recommended protection measures in the implementation schedule as stated in approved transplantation proposal were monitored and the conditions of the individuals of flora species of conservation interest were recorded as shown in Table 5.1.
- 5.3 According to the approved detailed vegetation survey report and transplantation proposal, 71 individuals of *Brainea insignis*, 41 individuals of *Spiranthes sinensis* and 3 individuals of *Aquilaria sinensis* were identified to be transplanted to the receptor site. 51 individuals of *Keteleeria fortunei*, 26 undersized seedlings of *Keteleeria fortunei* and 7 undersized seedlings of *Aquilaria sinensis* were identified to be retained along Kong Nga Po Road near Police Dog Unit and Force Search Unit Training School.

### Post-Transplantation Monitoring and Maintenance Programme

- 5.4 According to approved transplantation proposal, post-transplantation monitoring should be conducted by the Contractor once per week in the first three months and once per month afterwards during the 12-month establishment period and the post-establishment period until the end of construction phase of the Project. Regular monitoring allows early detection of the growth status of transplanted species, sign of construction activity within and nearby the receptor site, and any environmental change of the receptor site.
- 5.5 Maintenance works were recommended for the first year of establishment to allow healthy growth of the transplanted species. In view of the condition of transplanted individuals after the 12-month establishment period, maintenance works were recommended to extend during the Post-establishment Period until the end of Construction Phase. Watering was recommended in daily practice during the first three months after the transplantation and

during the dry season. Watering frequency may be reduced to at least twice a week and adjusted based on the plant condition to keep the soil moist. Other maintenance works like the use of mulch and weeding shall be conducted if required.

## Results and Observations

5.6 Monthly monitoring of flora species of conservation interest was conducted by the Contractor on 25th October 2023 during the reporting month. The implementation status of protection measures as stated in the approved transplantation proposal and the maintenance of temporary protective fence were inspected. The implementation status of protection measures is shown in **Table 5.1** and photographic record and checklists for monthly monitoring are shown in **Appendix H**. The health conditions of the transplanted / retained species are generally in fair and poor condition. The Contractor was reminded to closely monitor the transplanted species and implement the protection measures according to the approved transplantation proposal to protect the transplanted / retained species. In addition, the Contractor was also advised of the following:

- 1) To arrange the new tags for those *Brainea insignis* with missing tags;
- 2) To replace the faded plant labels identified in the receptor site.
- 3) To refer to the guidelines on soil improvement issued by the Greening, Landscape and Tree Management Section (GLTMS) of the development bureau (2022) to apply to monitoring and maintenance of transplanted flora species.
- 4) To install shaded nets

### Transplanted *Brainea insignis* and *Spiranthes sinensis*

5.7 71 individuals of *Brainea insignis* and 41 individuals of *Spiranthes sinensis* were transplanted to receptor site from 21st to 27th May 2020. Transplantation Report recording the process of transplantation has been submitted to ET(Wellab), IEC(Acuity) and the Supervisor (AECOM) for review and record. Post-transplantation monitoring was conducted once per week in the first three months (June to August 2020) and once per month during the 12-month establishment period and the post-establishment period until the end of construction phase of the Project. The health condition of the transplanted species was monitored by the Contractor. The Contractor provided maintenance works including watering, use of mulch and weeding in the first year of establishment to allow health growth of the transplanted species. Post-transplantation monitoring on transplanted *Brainea insignis* and *Spiranthes sinensis* was conducted on 25th October 2023 during the reporting month and the post-transplantation monitoring record is shown in **Appendix H**. The health condition of the transplanted *Brainea insignis* affected by bushfire on 2nd February 2021 was closely monitored and reported in the post-transplantation monitoring records. The health conditions of the retained species are generally in fair condition. The Contractor was reminded to closely monitor the retained species and implemented the protection measures to protect the retained species.

5.8 During monthly monitoring, no construction activity and equipment storage was observed within the receptor site. Temporary protective fence was properly erected and maintained for the transplanted species.

Table 5.1 Implementation Status of Protection Measures for Flora Species of Conservation Interest

Recommended Mitigation Measures	Implementation Status
<b><i>Brainea insignis</i></b>	
<p><b>Identification of Plant Species of Conservation Importance to be Retained / Transplanted</b></p> <p>To mark trees/plants proposed to be retained and to be transplanted on the layout plan prior to commencement of site construction works.</p>	^
<p><b>Protection of Plant Species of Conservation Importance prior to Site Clearance / Transplantation Works</b></p> <p>a) No site clearance shall be started at the locations of flora species of conservation interest until the transplantation works completed.</p> <p>b) Set up buffer zone to enhance the protection of flora species of conservation importance to be preserved / transplanted including the proposed location for transplantation when the site clearance works shall commence before the transplantation works completed.</p>	N/A  N/A
<p><b>Temporary Protective Fence for Flora Species of Conservation Interest / Retained Tree</b></p> <p>a) To erect a temporary protective fence enclosing the flora species of conservation interest identified under the detailed vegetation survey.</p> <p>b) To set up a protection zone at least 1m from the plant / retained tree and erect robust, bright-coloured fencing of 1.5m in height.</p>	^  ^
<p><b>Maintenance of the Protection Zone for Flora Species of Conservation Interest / Retained Tree</b></p> <p>a) Monthly monitoring of flora species of conservation interest identified in the detailed vegetation survey should be conducted.</p> <p>b) To inspect the temporary protective fence whether it is properly erected and maintained during construction.</p>	^  ^
<p><b>Post-transplantation Monitoring</b></p> <p>a) Weekly post-transplantation monitoring of transplanted species in the first three months and monthly afterwards.</p>	^
<p><b>Maintenance of Transplanted Species</b></p> <p>a) To keep the soil moist by watering the receptor sites properly and adequately.</p> <p>b) To apply mulches on the soil surface over the plant root system, if required.</p> <p>c) To remove unwanted weeds found in receptor sites.</p>	^ ^ ^
<p><b>Other Protection Measures for Flora Species of Conservation Interest / Retained Tree / Vegetated Areas</b></p> <p>a) All works should be confined within the site boundary.</p> <p>b) Access of site staff should be controlled.</p> <p>c) Care should be taken to prevent trees/plants being damaged by mechanical equipment or stockpile both during site clearance works and construction works.</p> <p>d) No fixings should be driven into trees/plants.</p>	^ ^ ^ ^

e) No workshop, canteens, or similar should be installed beneath trees/plants, nor will equipment maintenance etc. be carried out under trees/plants.	^
f) No excavation, including that for services or changes in ground level will take place within the spread of the crown of the trees / plants.	^
g) No soil, debris or construction materials should be deposited around and against the trunk of a tree/plant as this causes bark damage and compaction of the soil.	^
h) No fire should be lit below the branches and no petrol, oil or caustic substances stored near the trees/plants.	^
i) No trees/plants should be used for anchoring or winching purposes or for the display of signs.	^
j) Any damage or injury to the retained / transplanted plants should be reported as soon as possible for repair immediately.	^
<b><i>Spiranthes sinensis</i></b>	
<b>Identification of Plant Species of Conservation Importance to be Retained / Transplanted</b>	
To mark trees/plants proposed to be retained and to be transplanted on the layout plan prior to commencement of site construction works.	^
<b>Protection of Plant Species of Conservation Importance prior to Site Clearance / Transplantation Works</b>	
a) No site clearance shall be started at the locations of flora species of conservation interest until the transplantation works completed.	N/A
b) Set up buffer zone to enhance the protection of flora species of conservation importance to be preserved / transplanted including the proposed location for transplantation when the site clearance works shall commence before the transplantation works completed.	N/A
<b>Temporary Protective Fence for Flora Species of Conservation Interest / Retained Tree</b>	
a) To erect a temporary protective fence enclosing the flora species of conservation interest identified under the detailed vegetation survey.	^
b) To set up a protection zone at least 1m from the plant / retained tree and erect robust, bright-coloured fencing of 1.5m in height.	^
<b>Maintenance of the Protection Zone for Flora Species of Conservation Interest / Retained Tree</b>	
a) Monthly monitoring of flora species of conservation interest identified in the detailed vegetation survey should be conducted.	^
b) To inspect the temporary protective fence whether it is properly erected and maintained during construction.	^
<b>Post-transplantation Monitoring</b>	
a) Weekly post-transplantation monitoring of transplanted species in the first three months and monthly afterwards.	^
<b>Maintenance of Transplanted Species</b>	
a) To keep the soil moist by watering the receptor sites properly and adequately.	^
b) To apply mulches on the soil surface over the plant root system, if required.	^
c) To remove unwanted weeds found in receptor sites.	^
<b>Other Protection Measures for Flora Species of Conservation Interest / Retained Tree / Vegetated Areas</b>	
a) All works should be confined within the site boundary.	^
b) Access of site staff should be controlled.	^
c) Care should be taken to prevent trees/plants being damaged by mechanical equipment or stockpile both during site clearance works and construction works.	^

d) No fixings should be driven into trees/plants.	^
e) No workshop, canteens, or similar should be installed beneath trees/plants, nor will equipment maintenance etc. be carried out under trees/plants.	^
f) No excavation, including that for services or changes in ground level will take place within the spread of the crown of the trees / plants.	^
g) No soil, debris or construction materials should be deposited around and against the trunk of a tree/plant as this causes bark damage and compaction of the soil.	^
h) No fire should be lit below the branches and no petrol, oil or caustic substances stored near the trees/plants.	^
i) No trees/plants should be used for anchoring or winching purposes or for the display of signs.	^
j) Any damage or injury to the retained / transplanted plants should be reported as soon as possible for repair immediately.	^

<b>Implementation status:</b>	^	Mitigation measure was fully implemented
	*	Observation/reminder was made during monitoring but improved/rectified by the contractor
	#	Observation/reminder was made during monitoring but not yet improved/rectified by the contractor
	X	Non-compliance of mitigation measure
	•	Non-compliance but rectified by the contractor
	N/A	Not Applicable at this stage as no such site activities were conducted in the reporting period

**Precautionary Measure for Butterfly Species of Conservation Interest**

5.9 According to FEP Condition 2.17, with consideration of minimizing impact on butterfly species of conservation interest, the re-establishment of the new grassland areas in the Project site shall be enhanced, through planting of appropriate plant species which are the larval food plants of butterfly species of conservation interest such as Small Three-Ring, in order to benefit these species.

5.10 The re-establishment of grassland areas in the Project shall be implemented before Commencement of Operation of the Project. Details of the plant species as larval food plants of butterflies including design and implementation arrangement will be further submitted under ArchSD’s building works contract.

**Precautionary Measures to Minimize Indirect Disturbance on Ecology**

5.11 In accordance with Section 9.7.3 of EIA Report, mitigation measures for air, noise, water, waste and landscape aspects could act as precautionary measures to prevent and minimize any indirect disturbance impact or pollution arisen from the construction activities on the local ecology and offsite habitats. Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures on the Project site and the observations are summarised in Section 7.3.



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## 6 LANDSCAPE AND VISUAL MONITORING

### Monitoring Requirements

- 6.1 The EIA Report has recommended mitigation measures for landscape and visual resources to be undertaken during the construction and operation phases of the Project.
- 6.2 These measures include the consideration of a number of development options and the provision of mitigation measures to directly offset unavoidable impacts. The measures include strategies for reducing, offsetting and compensating impacts during construction and operation phases according to Section 10.13 in the EIA Report.
- 6.3 The implementation and maintenance of landscape compensatory planting measures is a key aspect of this and shall be checked to ensure that they are fully realised and that potential conflicts between the proposed landscape measures and any other Project works and operational requirements are resolved at the earliest possible date and without compromise to the intention of the mitigation measures. In addition, implementation of the mitigation measures recommended by the EIA shall be monitored throughout the construction phase site audit programme.
- 6.4 Bi-weekly inspection of the implementation of landscape and visual mitigation measures was conducted by ET during weekly site audit. The observation and recommendations made during the audit sessions are summarised in Table 7.1. The implementation status is given in **Appendix K**.

## 7 ENVIRONMENTAL SITE INSPECTION

### Site Audits

- 7.1 Site audits were carried out by ET on weekly basis to monitor the timely implementation of proper environmental management practices and mitigation measures on the Contract site.
- 7.2 Site audits were conducted by ET with the representative of the Client's Representative and the Contractor on 3, 10, 18, 24, 31 October 2023 in the reporting month. Site audits with the representative of the Contractor and IEC were carried out on 18th October 2023.
- 7.3 During site inspections in the reporting month, no non-conformance was identified. The observations and advices made during the audit sessions are summarised in **Table 7.1**.

Table 7.1 Observations of Weekly site Inspection and advice

Parameters	Date	Observations	Advice
Air Quality	--	No environmental deficiency was identified during the reporting month.	--
Construction Noise Impact	--	No environmental deficiency was identified during the reporting month.	--
Water Quality	--	No environmental deficiency was identified during the reporting month.	
Waste/ Chemical Management	24-10-2023	General refuse was observed inside the scrap metal collection cage	<ol style="list-style-type: none"> <li>1. General refuse was removed</li> <li>2. General refuse should be stored in enclosed bins</li> <li>3. Training in proper waste management is provided for site personnel.</li> </ol>
Landscape and Visual	--	No environmental deficiency was identified during the reporting month.	--
Ecology	--	No environmental deficiency was identified during the reporting month.	--
Permit /Licences	--	No environmental deficiency was identified during the reporting month.	--
Others	03-10-2023	Stagnant water is observed.	<ol style="list-style-type: none"> <li>1. The pipes for water discharge are well positioned to prevent the accumulation of standing water and leakage in the event of damage. The water outlet level is either lower than or at the same level as the water inlet</li> <li>2. No usage of washing facility until secured connection without leakage between sink and pipes during trial with full loading.</li> <li>3. Spot for relocation of sinks</li> </ol>

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**Implementation Status of Environmental Mitigation Measures**

- 7.4 According to the EIA Report, Environmental Permit and the EM&A Manual of the Project, the mitigation measures detailed in the documents are recommended to be implemented during the construction phase. An updated summary of the Environmental Mitigation Implementation Schedule (EMIS) is provided in **Appendix K**.

**Solid and Liquid Waste Management Status**

- 7.5 In accordance with the EM&A Manual, waste management was audited during weekly site audit to determine if wastes are being managed in accordance with the Waste Management Plan (WMP) prepared for the Project and the relevant legislative and contractual requirements. Waste management practices including waste handling, storage, transportation, and disposal were audited.
- 7.6 The Contractor has nominated on-site Environmental Officers to oversee the environmental management, pollution control measures, good site practices and training of site personnel in waste management. Proactive measures have been undertaken to make use of Construction and Demolition (C&D) materials to minimize the waste generated. On-site sorting and screening of excavated materials have been carried out to recover any recyclable portions. Inert C&D materials were used on-site for backfilling works and hard paving of haul road. In addition, inert C&D materials generated from excavation works were reused as fill materials in other local projects. The surplus inert C&D materials were disposed of at the Government's public fill reception facilities (PFRFs) for beneficial use by other projects. In order to monitor the disposal of inert and non-inert C&D materials and to control fly-tipping, every excavated material before leaving the site is weighted by a weight bridge and Trip Ticket System is strictly followed.
- 7.7 The Contractors are advised to minimize the wastes generated through the recycling or reusing. All mitigation measures stipulated in the EM&A Manual and waste management plans shall be fully implemented. The status of implementation of waste management and reduction measures is summarised in **Appendix K**.
- 7.8 Waste generated from this Project includes inert C&D materials and non-inert C&D materials. Non-inert C&D materials are made up of general refuse and waste that cannot be reused or recycled and has to be disposed of at the designated landfill sites. The amount of wastes generated by the construction works of the Project during the reporting month is shown in **Appendix L**.

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## 8 ENVIRONMENTAL NON-CONFORMANCE

### Summary of Exceedances

- 8.1 No exceedance of Action and Limit Levels of air quality was recorded in the reporting month.
- 8.2 No exceedance of Action and Limit Levels of construction noise was recorded in the reporting month.
- 8.3 Should the monitoring results of the environmental monitoring parameters at any designated monitoring stations indicate that the Action / Limit Levels are exceeded, the actions in accordance with the Event and Action Plans in **Appendix I** be carried out. The summary of exceedance record in reporting month is shown in **Appendix J**.

### Summary of Environmental Non-Compliance

- 8.4 No environmental non-compliance was recorded in the reporting month.

### Summary of Environmental Complaint

- 8.5 There was no environmental complaint received in the reporting month. The Cumulative Complaint Log since the commencement of the Project is presented in Appendix M.

### Summary of Environmental Summon and Successful Prosecution

- 8.6 There was no successful environmental prosecution or notification of summons received since the Project commencement. The Cumulative Log for environmental summon and successful prosecution since the commencement of the Project is presented in **Appendix N**.

## 9 FUTURE KEY ISSUES

### Key Issues in the Coming Three Months

- 9.1 The tentative construction programmes for the Project are provided in **Appendix A**. The major construction activities undertaken in the coming three months will include:
- Open cut excavation
  - Removal of soil
  - Construction of footings
  - Pre-bored socketed-H Piling
  - U.U. Lead in and Pipe Duct Connection
- 9.2 With reference to the site layout plan including the indication of coming three months construction site activities in **Appendix A**, potential environmental impacts arising from the above construction activities are mainly associated with construction dust, noise, water quality, waste management, landscape and visual and ecology. The foreseeable environmental impacts were taken into consideration of the planned mitigation measures in the coming months.
- 9.3 The mitigation measures to be implemented for the coming three months were proposed by the Contractor and reviewed by ET, IEC and the Client's Respective through Email, during site audit and SSEMC meeting. The Proactive Environmental Protection Proforma summarizing the major site activities, potential environmental impacts and recommended mitigation measures was reviewed and endorsed by IEC and was shown in **Appendix A**.
- 9.4 Dust can be generated during construction works and exposed site areas during dry weather. To prevent high dust concentrations during the dry weather, the Contractor should pay attention on the air quality mitigation measures as far as practicable to minimise the dust impact to the villages which are located adjacent to the Project works (refer to the layout plan in **Appendix A**). The Contractor was also reminded to follow the Project Implementation Schedule in approved EIA report / EM&A Manual to implement appropriate dust control measure to reduce dust emissions from heavy construction activities (including ground excavation, earth moving, etc.) at all active works area exposed site surfaces and unpaved roads, particularly during dry weather and covering 80% of stockpiling area by impervious sheets and spraying all dusty material with water immediately prior to any loading transfer operations to keep the dusty materials wet during material handling at the stockpile areas" as well as the relevant dust control practices as stipulated in the Air Pollution Control (Construction Dust) Regulation so that no adverse dust impact arising from the Project works site.

- 9.5 In addition, construction noise is also one of the key environmental issues during construction of the Project. Noise mitigation measures such as using quiet plants and noise barriers should be in place, where applicable. In addition, the Contractor was reminded to frequently check and maintain the acoustic materials wrapped on noisy part of PME and ensure no gaps between noise barriers; proactively identify any potential construction noise impact to NSRs and provide sufficient mitigation measures if necessary; and provide notification to nearby villagers in Kong Nga Po for potential noisy works at works area.
- 9.6 The Contractor is also recommended to maintain water quality mitigation measures during construction works. The dikes or embankments for flood protection should be implemented around the boundaries of earthwork areas. Temporary ditches should be provided to facilitate the runoff discharge into an appropriate watercourse, through a site/sediment trap. The sediment/silt traps should be incorporated in the permanent drainage channels to enhance deposition rates. Efficient silt removal facilities shall be deployed to ensure all treated effluent from wastewater treatment plant shall meet the requirements as stated in WPCO licences. The site drainage plan shall also be updated based on the site condition and construction programme.

#### **Monitoring Schedule for the Next Month**

- 9.7 The tentative environmental monitoring schedule for the next month is shown in **Appendix D**.

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## 10 CONCLUSIONS AND RECOMMENDATIONS

### Conclusions

- 10.1 This Monthly EM&A Report presents the EM&A work undertaken in October 2023 in accordance with EM&A Manual.
- 10.2 No Action/Limit Level exceedance was recorded for air quality monitoring in the reporting month.
- 10.3 No Action/Limit Level exceedance was recorded for construction noise monitoring in the reporting month.
- 10.4 Environmental site inspections were conducted on 3, 10, 18, 24, 31 October 2023 and landscape and visual monitoring was carried out on 3, 18 October 2023, whereas ecological monitoring was carried out on 31 October 2023 by ETL in the reporting month. No environmental non-compliance was recorded in the reporting month.
- 10.5 No environmental complaint received in the reporting month. No notification of summons or successful prosecutions was received in the reporting month.
- 10.6 The ET would keep track on the EM&A programme. The environmental requirements are complied with and all necessary mitigation measures are properly implemented.

### Recommendations

- 10.7 According to the environmental audits performed in the reporting month, the following recommendations were made:

#### *Air Quality Impact*

- To maintain the cover for stockpile of dusty materials and exposed slope for dust suppression;
- To enhance the dust suppression measures including watering for the dust generation works, exposed site area and haul road;
- To regular check the valid NRMM labels are properly displayed on the regulated machines and non-road vehicles; and
- To maintain the wheel washing facilities provided at every construction site exit where practicable are functioning properly.

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*Construction Noise*

- To keep inspect the noise sources inside the site;
- To keep space out noisy equipment and position the equipment as far away as possible from sensitive receivers; and
- To maintain temporary noise barriers for operations of noisy equipment near the noise sensitive receivers, if necessary.

*Water Impact*

- To maintain the cover for open stockpile of and exposed slope;
- To keep reviewing and updating temporary drainage system;
- To maintain the earth bunds or sand bag barriers on site to direct stormwater to silt removal facilities;
- To maintain and ensure the silt removal facilities are functioning properly;
- To maintain the wheel washing facilities provided at every construction site exit where practicable are functioning properly; and
- To divert the muddy water at the retention pond to the wetsep for treatment before discharging out.

*Waste/Chemical Management*

- To check for any accumulation of waste materials or rubbish on site;
- To avoid any discharge or accidental spillage of chemical waste or oil directly from the site;
- To maintain the drip tray well to prevent oil and chemical leakage; and
- To avoid improper handling, storage and dispose of oil drums or chemical containers on site.

*Ecology*

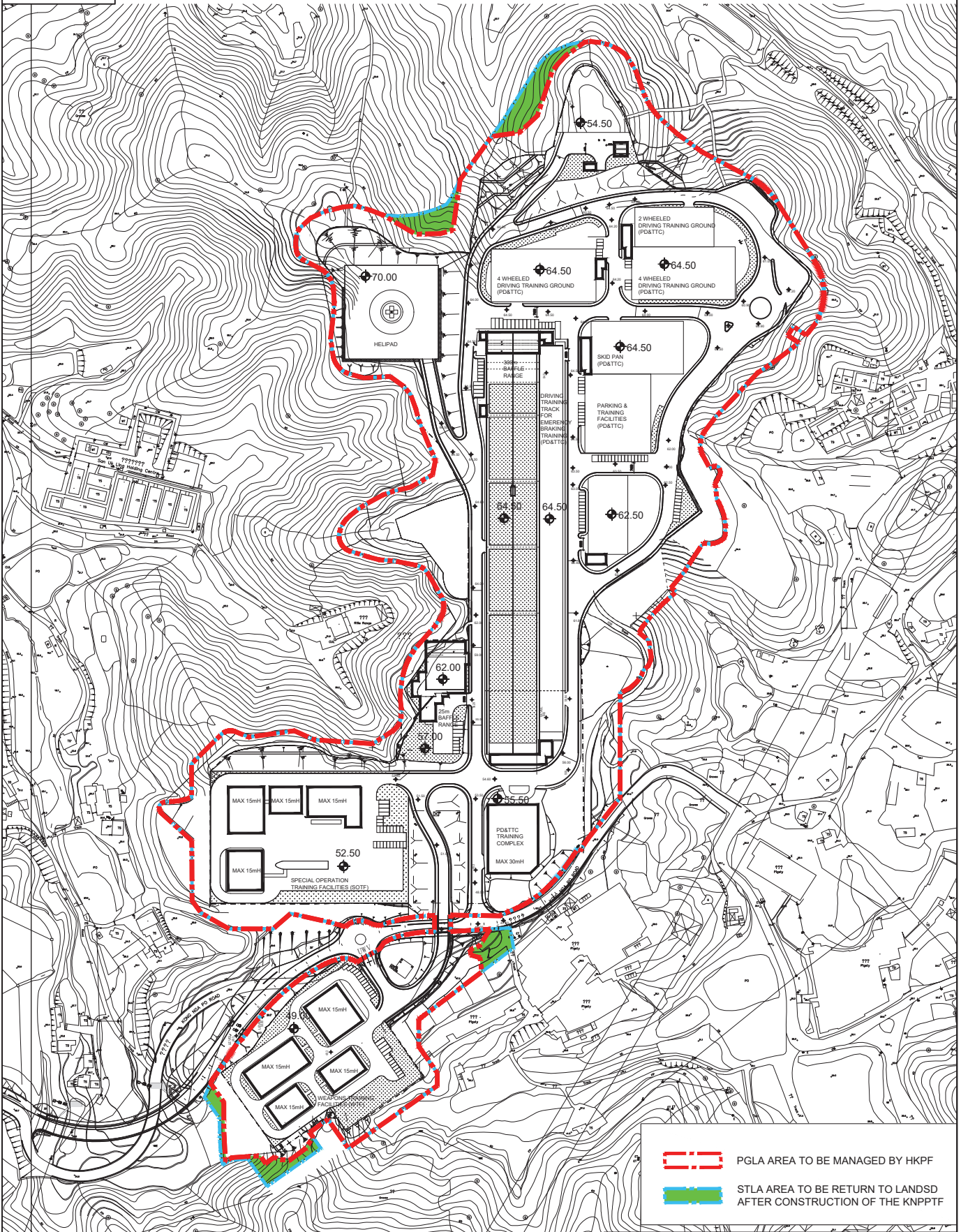
- To erect and maintain the protection fence around the retained trees / conservation species;
- To keep the tree protection zone large enough to protect the trees; and
- To remove the construction materials within the tree protection zone.



*Landscape and Visual*

- To erect and maintain the protection fencing and tree protection zone around the preserved trees;
- To remove the construction materials within the tree protection zone; and
- To keep the tree protection zone large enough to protect the trees.



**FIGURE(S)**



 PGLA AREA TO BE MANAGED BY HKPF  
 STLA AREA TO BE RETURN TO LANDSD AFTER CONSTRUCTION OF THE KNPTF



MASTER LAYOUT PLAN

PROJECT CODE: 3279LP  
PROPOSED MLP FOR KONG NGA PO TRAINING FACILITIES

DRAWING NO. PMB/8480/XA001

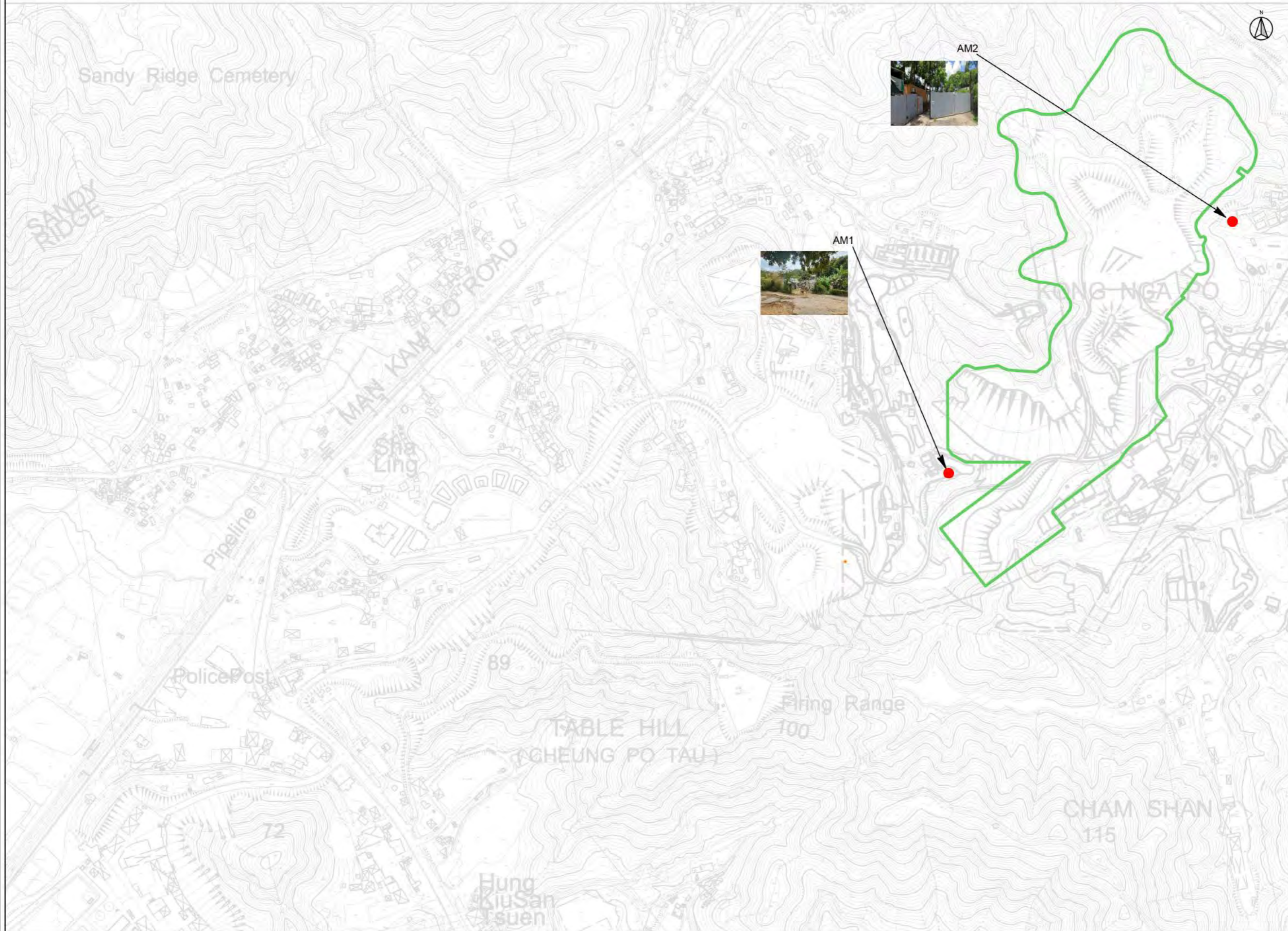
SCALE: 1:400  
DATE: AUGUST 2021



ARCHITECTURAL SERVICES DEPARTMENT 建築署



Figure 2 Location of Air Quality Monitoring Stations



KEY PLAN  
SCALE: 1:50000

- LEGENDS:
- KONG NGA PO SITE BOUNDARY
  - AIR QUALITY MONITORING STATIONS

AIR QUALITY MONITORING STATIONS	
ID	Description
AM1	Village House, Kong Nga Po
AM2	Village House, Kong Nga Po

CLIENT  
**建築署**  
Architectural Services Department

Environmental Team  
**嘉誠管理顧問有限公司**  
Ka Shing Management Consultancy Ltd  
www.ka-shing.net

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Rev.	Description	Date
2	SECOND ISSUE	03/2023
1	FIRST ISSUE	03/2023

Project Title  
PROVISION OF ENVIRONMENTAL TEAM CONSULTANCY FOR DESIGN AND CONSTRUCTION OF KONG NGA PO POLICE TRAINING FACILITIES

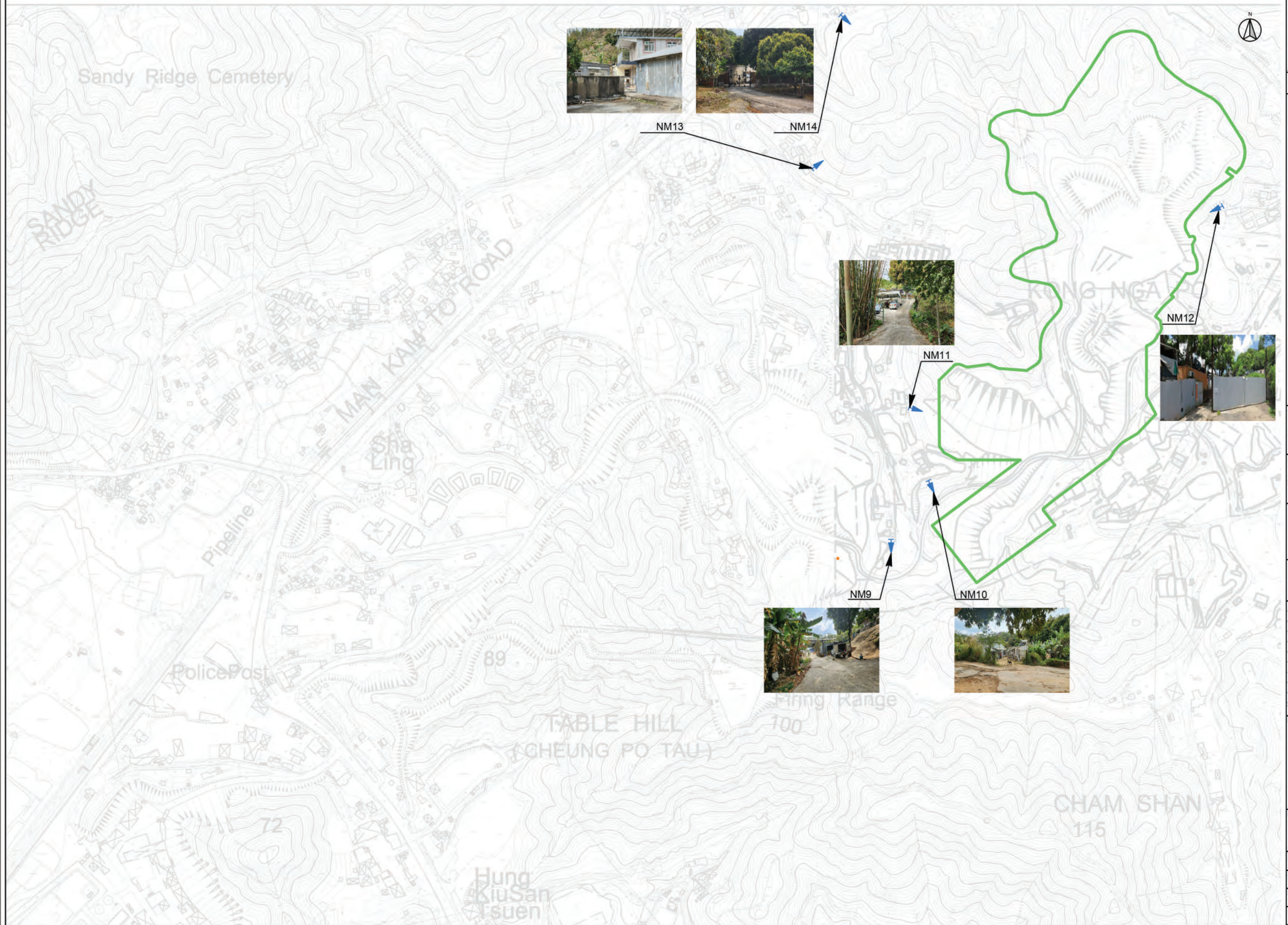
Drawing Title  
KONG NGA PO ROAD AIR QUALITY MONITORING STATIONS

Drawing Status	
Project Ref.	File Ref.
Drawn by JC	Checked by RH
Scale 1:40000	Paper Size A3
Date	Revision

Drawing Number  
KASHING-KNPR-DWG-002



Figure 3 Location of Noise Monitoring Stations



**KEY PLAN**  
SCALE: 1:50000

**LEGENDS**  
 — KONG NAG PO SITE BOUNDARY  
 ▲ NOISE MONITORING STATIONS

ID	Description
NM9	Village House, Kong Nga Po
NM10	Village House, Kong Nga Po
NM11	Village House, Kong Nga Po
NM12	Village House, Kong Nga Po
NM13	Village House, Kong Nga Po
NM14	Village House, near Man Kam To Road

**CLIENT**  
 Architectural Services Department

**Environmental Team**  
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Rev.	Description	Date
2	SECOND ISSUE	03/2023
1	FIRST ISSUE	03/2023

**Project Title**  
 PROVISION OF ENVIRONMENTAL TEAM CONSULTANCY FOR DESIGN AND CONSTRUCTION OF KONG NGA PO POLICE TRAINING FACILITIES

**Drawing Title**  
 KONG NGA PO ROAD NOISE MONITORING STATION

Project Ref.	File Ref.
-	--
Drawn by	Checked by
JC	RH
Scale	Paper Size
1:40000	A3
Date	Revision
-	-

**Drawing Number**  
 KASHING-KNPR-DWG-003



**APPENDIX A**  
**CONSTRUCTION PROGRAMME AND**  
**PROACTIVE ENVIRONMENTAL**  
**PROTECTION PROFORMA**

# Construction Programme

(Nov 2023 – Jan 2024)



# Layout Plan with major construction activities



**Legend:**

- Foundation construction and associated works
- Mock-up construction



- Soil Storage

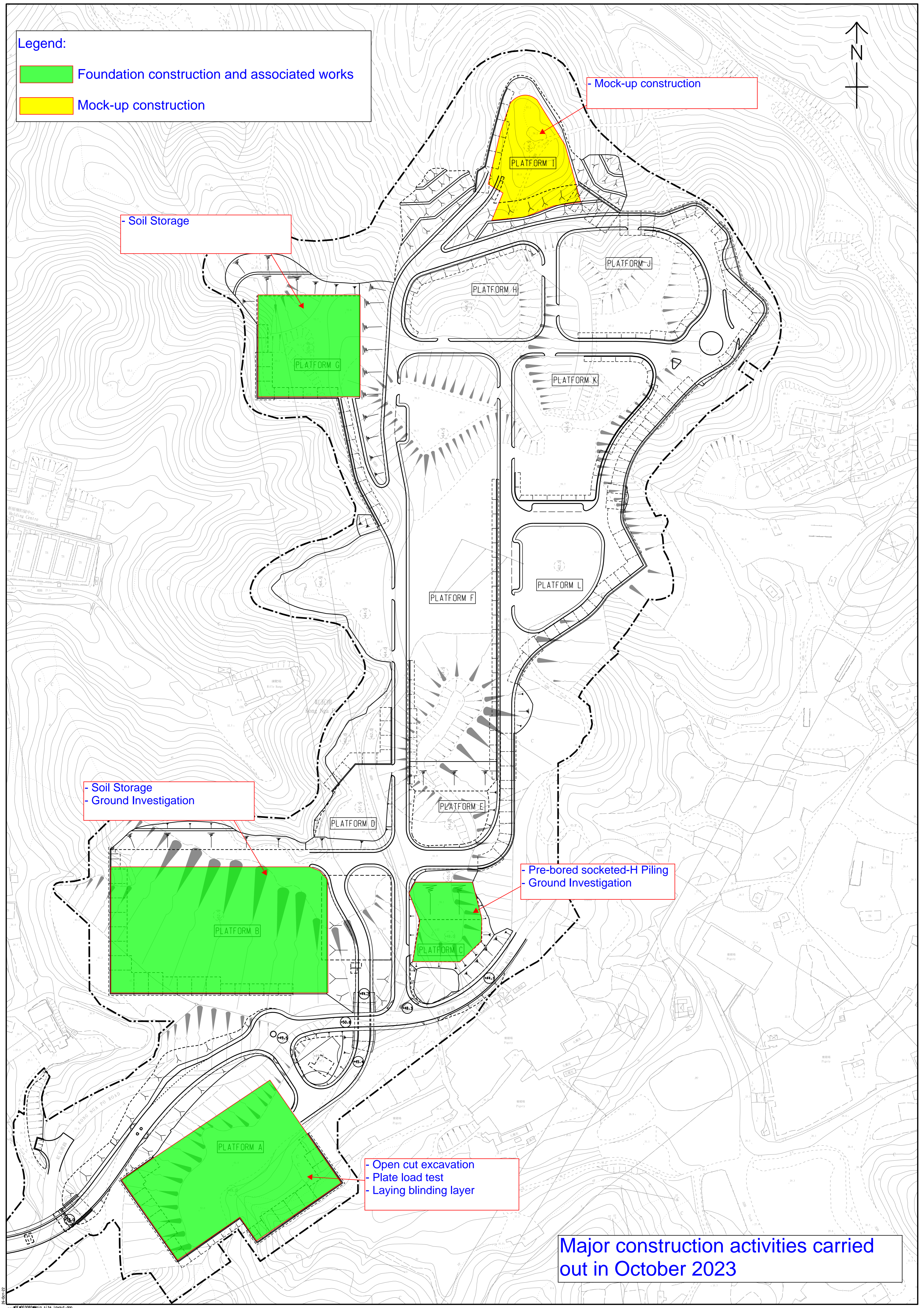
- Mock-up construction

- Soil Storage  
- Ground Investigation

- Pre-bored socketed-H Piling  
- Ground Investigation

- Open cut excavation  
- Plate load test  
- Laying blinding layer

Major construction activities carried out in October 2023





Legend:

- Foundation construction and associated works
- Construction of footings
- Mock-up construction



- Soil Storage

- Open cut excavation  
- Soil removal  
- U.U. Lead in and Pipe Duct Connection

- Mock-up construction

- Open cut excavation  
- Soil removal  
- U.U. Lead in and Pipe Duct Connection

- Open cut excavation  
- Soil removal/ Soil Storage

- Open cut excavation  
- Soil removal  
- U.U. Lead in and Pipe Duct Connection

- Open cut excavation  
- Soil removal  
- U.U. Lead in and Pipe Duct Connection

- Soil Storage  
- Open cut excavation  
- Soil removal  
- Construction of footings

- Open cut excavation  
- Soil removal  
- Construction of footings

- Ground Investigation  
- Soil removal  
- Pre-bored socketed-H Piling  
- Construction of footings

- Construction of footings  
- U.U. Lead in and Pipe Duct Connection

Major construction activities carried out in period of Nov 2023~Jan 2024



# Proactive Environmental Protection Proforma

Ref*	Proposed Construction Method	Location/Working Period	Anticipated Major Impacts	Recommended Mitigation Measures
EIA 3.9.1; EM&A Log 2.2	Open cut excavation	Kong Nga Po Site	Dust impact from excavation activities and earth moving	<ul style="list-style-type: none"> <li>• Use of regular water spraying (once every 1.25 hours or 8 times per day) at all active works area exposed site surfaces and unpaved roads, particularly during dry weather</li> <li>• Deploy water bowser for regular water spraying to enhance dust suppression</li> <li>• Manual water spraying for dusty operation where inaccessible by water bowser</li> <li>• Speed control of site transportation</li> <li>• Stockpile of dusty materials will be covered by tarpaulin sheets to avoid wind-blown dust</li> <li>• Vehicles used for transporting dusty materials/spoils will be covered by mechanical cover before leaving the site</li> <li>• Wheel washing facilities will be provided and cleaning the wheel of all vehicles before leaving the site</li> </ul>
EIA 4.4.6; EM&A Log 3.2			Noise Control	<ul style="list-style-type: none"> <li>• Regular inspection and maintenance of plant &amp; equipment in good condition</li> </ul>

				<ul style="list-style-type: none"> <li>• Enclose the noisy part of machineries with noise enclosure</li> <li>• Adopt of Quality Powered Mechanical Equipment (QPME) if possible</li> </ul>
			Working in Restricted Hours	<ul style="list-style-type: none"> <li>• Valid construction noise permit should be obtained and displayed on site</li> <li>• In case of non-compliance with the construction noise criteria, more frequent monitoring and action should be carried out</li> </ul>
EIA 5.6.1.2; EM&A Log 4.2			Water Pollution Control	<ul style="list-style-type: none"> <li>• Cover the stockpiles of construction materials to reduce the potential for water pollution</li> <li>• Provide wastewater treatment facilities prior to discharge of wastewater</li> <li>• Regular inspection and maintenance of wastewater treatment facilities</li> <li>• Wastewater pumped out of the excavation areas will be treated to remove suspended solids prior to discharge</li> <li>• Hard paving or well-compact of main haul road to minimize washout of soil</li> <li>• Wheels of all vehicles and plants will be cleaned before leaving the work areas to remove sediment, soil and debris from the tracked. The wastewater will be treated and reused on site or discharged.</li> </ul>
EIA 7.5.1.1 &			Waste Generation	<ul style="list-style-type: none"> <li>• Training of site personnel in proper waste management and</li> </ul>

7.5.1.2; EM&A Log 6.2				<p>chemical handling procedures</p> <ul style="list-style-type: none"> <li>• Proper storage and sorting of excavated inert materials to maximize on site reuse for backfilling</li> <li>• Surplus inert C&amp;D materials will be disposed of at designated Government's PFRF.</li> </ul>
EIA 7.5.1.4; EM&A Log 6.2			Chemical Waste	<ul style="list-style-type: none"> <li>• Chemical waste should be stored at chemical waste container and collected by a licensed collector to transport and dispose of at the approved Chemical Waste Treatment Centre</li> <li>• Drip tray and chemical spillage kit will be provided on site</li> </ul>
EIA 9.7.1 and EM&A Log 8.3			Ecology Concern	<ul style="list-style-type: none"> <li>• Provide training to frontline workers for the conservative species</li> <li>• Provision of protective fence for the conservative species</li> <li>• Regular inspection for concerned vegetation and conservative species</li> </ul>
EIA Table 10.11; EM&A Table 9.1			Landscape and Visual Impact	<ul style="list-style-type: none"> <li>• Preservation of existing trees will be undertaken in accordance with DEVB TC(W) 7/2015 and Guidelines for Tree Risk Assessment and Management Arrangement</li> <li>• Restrict construction area to minimize the impact on existing retained trees</li> </ul>
EIA 3.9.1; EM&A Log 2.2	Soil Removal	Kong Nga Po Site	Dust impact from excavation activities and earth	<ul style="list-style-type: none"> <li>• Use of regular water spraying (once every 1.25 hours or 8 times per day) at all active works area exposed site surfaces and unpaved roads, particularly during dry weather</li> </ul>

			moving	<ul style="list-style-type: none"> <li>• Water spraying during loading and unloading of excavated materials</li> <li>• Vehicles used for transporting dusty materials/spoils will be covered by mechanical cover before leaving the site</li> <li>• Deploy water bowser for regular water spraying to enhance dust suppression</li> <li>• Speed control of site transportation</li> <li>• Stockpile of dusty materials will be covered by tarpaulin sheets to avoid wind-blown dust</li> <li>• Wheel washing facilities will be provided and cleaning the wheel of all vehicles before leaving the site</li> </ul>
EIA 4.4.6; EM&A Log 3.2			Noise Control	<ul style="list-style-type: none"> <li>• Regular inspection and maintenance of plant &amp; equipment in good condition</li> <li>• Enclose the noisy part of machineries with noise enclosure</li> <li>• Adopt of Quality Powered Mechanical Equipment (QPME) if possible</li> </ul>
			Working in Restricted Hours	<ul style="list-style-type: none"> <li>• Valid construction noise permit should be obtained and displayed on site</li> <li>• In case of non-compliance with the construction noise criteria, more frequent monitoring and action should be carried out</li> </ul>
EIA 5.6.1.2; EM&A Log 4.2			Water Pollution Control	<ul style="list-style-type: none"> <li>• Cover the stockpiles of excavated materials to reduce the potential for water pollution</li> </ul>

				<ul style="list-style-type: none"> <li>• Provide wastewater treatment facilities prior to discharge of wastewater</li> <li>• Regular inspection and maintenance of wastewater treatment facilities</li> <li>• Wheels of all vehicles and plants will be cleaned before leaving the work areas to remove sediment, soil and debris from the tracked. The wastewater will be treated and reused on site or discharged.</li> </ul>
EIA 7.5.1.1 & 7.5.1.2; EM&A Log 6.2			Waste Generation	<ul style="list-style-type: none"> <li>• Training of site personnel in proper waste management and chemical handling procedures</li> <li>• Proper storage and sorting of excavated inert materials to maximize on site reuse for backfilling</li> <li>• Surplus inert C&amp;D materials will be disposed of at designated Government's PFRF.</li> </ul>
EIA 7.5.1.4; EM&A Log 6.2			Chemical Waste	<ul style="list-style-type: none"> <li>• Chemical waste should be stored at chemical waste container and collected by a licensed collector to transport and dispose of at the approved Chemical Waste Treatment Centre</li> <li>• Drip tray and chemical spillage kit will be provided on site</li> </ul>
EIA 9.7.1 and EM&A Log 8.3			Ecology Concern	<ul style="list-style-type: none"> <li>• Provide training to frontline workers for the conservative species</li> <li>• Provision of protective fence for the conservative species</li> <li>• Regular inspection for concerned vegetation and conservative</li> </ul>



				species
EIA Table 10.11; EM&A Table 9.1			Landscape and Visual Impact	<ul style="list-style-type: none"> <li>• Preservation of existing trees will be undertaken in accordance with DEVB TC(W) 7/2015 and Guidelines for Tree Risk Assessment and Management Arrangement</li> <li>• Restrict construction area to minimize the impact on existing retained trees</li> </ul>
EIA 3.9.1; EM&A Log 2.2	Construction of footings	Kong Nga Po Site	Air	<ul style="list-style-type: none"> <li>• Regular inspection and maintenance of plant and equipment in good condition</li> <li>• Regularly clean up stockpiles and debris to avoid accumulation of materials</li> <li>• Dusty materials exceeding 20 bags shall be stored in area sheltered on top and the three sides or covered entirely by impervious sheeting.</li> </ul>
EIA 4.4.6; EM&A Log 3.2			Noise Control	<ul style="list-style-type: none"> <li>• Regular inspection and maintenance of plant &amp; equipment in good condition</li> <li>• Enclose the noisy part of machineries with noise enclosure</li> <li>• Adopt of Quality Powered Mechanical Equipment (QPME) if possible</li> </ul>
			Working in Restricted Hours	<ul style="list-style-type: none"> <li>• Valid construction noise permit should be obtained and displayed on site</li> <li>• In case of non-compliance with the construction noise criteria, more frequent monitoring and action should be carried out</li> </ul>


EIA 5.6.1.2; EM&A Log 4.2			Water Pollution Control	<ul style="list-style-type: none"> <li>Wheels of all vehicles and plants will be cleaned before leaving the work areas to remove sediment, soil and debris from the tracked. The wastewater will be treated and reused on site or discharged.</li> <li>Designated location for residual concrete washout</li> <li>Provide wastewater treatment facilities prior to discharge of wastewater</li> </ul>
EIA 7.5.1.4; EM&A Log			Chemical Waste	<ul style="list-style-type: none"> <li>Drip tray and chemical spillage kit shall be provided on site</li> </ul>
EIA 9.7.1 and EM&A Log 8.3			Ecology Concern	<ul style="list-style-type: none"> <li>Provide training to frontline workers for the conservative species</li> <li>Provision of protective fence for the conservative species</li> <li>Regular inspection for concerned vegetation and conservative species</li> </ul>
EIA Table 10.11; EM&A Table 9.1			Landscape and Visual Impact	<ul style="list-style-type: none"> <li>Preservation of existing trees will be undertaken in accordance with DEVB TC(W) 7/2015 and Guidelines for Tree Risk Assessment and Management Arrangement</li> <li>Implement temporary traffic arrangement which control construction area to minimize landscape and visual impacts</li> </ul>
EIA 3.9.1; EM&A Log 2.2	Pre-bored Socketed-H Piling	Kong Nga Po Site	Air	<ul style="list-style-type: none"> <li>Regular inspection and maintenance of plant and equipment in good condition</li> <li>Regularly clean up stockpiles and debris to avoid</li> </ul>

				<p>accumulation of materials</p> <ul style="list-style-type: none"> <li>Dusty materials exceeding 20 bags shall be stored in area sheltered on top and the three sides or covered entirely by impervious sheeting.</li> </ul>
EIA 4.4.6; EM&A Log 3.2			Noise Control	<ul style="list-style-type: none"> <li>Regular inspection and maintenance of plant &amp; equipment in good condition</li> <li>Enclose the noisy part of machineries with noise enclosure</li> <li>Adopt of Quality Powered Mechanical Equipment (QPME) if possible</li> </ul>
			Working in Restricted Hours	<ul style="list-style-type: none"> <li>Valid construction noise permit should be obtained and displayed on site</li> <li>In case of non-compliance with the construction noise criteria, more frequent monitoring and action should be carried out</li> </ul>
EIA 5.6.1.2; EM&A Log 4.2			Water Pollution Control	<ul style="list-style-type: none"> <li>Cover the stockpiles of construction materials to reduce the potential for water pollution</li> <li>Provide wastewater treatment facilities prior to discharge of wastewater</li> <li>Wastewater generated from piling or surface runoff shall be treated prior to discharge</li> </ul>
EIA 7.5.1.1; EM&A Log 6.2			Waste Management	<ul style="list-style-type: none"> <li>Cover stockpiles of C&amp;D materials by impervious sheets to avoid wind-blown dust.</li> <li>Spray water on all dusty materials including C&amp;D materials</li> </ul>

				immediately prior to any loading transfer operation
EIA 7.5.1.4; EM&A Log 6.2			Chemical Waste	<ul style="list-style-type: none"> <li>Drip tray and chemical spillage kit shall be provided on site</li> </ul>
EIA 9.7.1 and EM&A Log 8.3			Ecology Concern	<ul style="list-style-type: none"> <li>Provide training to frontline workers for the conservative species</li> <li>Provision of protective fence for the conservative species</li> <li>Regular inspection for concerned vegetation and conservative species</li> </ul>
EIA Table 10.11; EM&A Table 9.1			Landscape and Visual Impact	<ul style="list-style-type: none"> <li>Preservation of existing trees will be undertaken in accordance with DEVB TC(W) 7/2015 and Guidelines for Tree Risk Assessment and Management Arrangement</li> <li>Implement temporary traffic arrangement which control construction area to minimize landscape and visual impacts</li> </ul>

*\*EIA Ref/ EM&A Log/ Design Document Ref*

*\*\*Details of equipment, vehicles, plants, processes, technologies for the construction method*

Ref*	Proposed Construction Method	Location/Working Period	Anticipated Major Impacts	Recommended Mitigation Measures	Photo Records (Partial)
EIA 3.9.1; EM&A Log 2.2	Open cut excavation	Kong Nga Po Site	Dust impact	<ul style="list-style-type: none"> <li>• Deploy water bowser for regular water spraying to enhance dust suppression</li> <li>• Manual water spraying for dust suppression</li> <li>• Regular inspection and maintenance of plant and equipment in good condition</li> <li>• Cover stockpile with impervious sheets or grout</li> <li>• Provide wheel washing facility at site entrance</li> </ul>	 <p>By main contractor at KNP site</p>


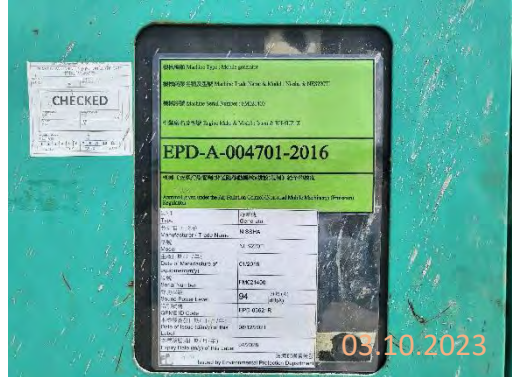
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By main contractor at KNP site







By main contractor at KNP site



					 <p>By main contractor at KNP site</p>
<p>EIA 4.4.6; EM&amp;A Log 3.2</p>			<p>Noise</p>	<ul style="list-style-type: none"> <li>• Regular inspection and maintenance of plant &amp; equipment in good condition</li> <li>• Deploy Quality Powered Mechanical Equipment (QPME) if possible</li> <li>• Provide noise insulating mat for certain powered mechanical equipment.</li> <li>• Valid construction noise permit should be</li> </ul>	 <p>By main contractor at KNP site</p>

				<p>displayed at site entrance.</p>	 <p>03.10.2023</p> <p>By main contractor at KNP site</p>
<p>EIA 9.7.1 and EM&amp;A Log 8.3</p>			<p>Ecology Concern</p>	<ul style="list-style-type: none"> <li>• Provide training to workers about the conservative species</li> <li>• Provision of protective fence for the conservative species</li> <li>• Regular inspection for concerned vegetation and conservative species</li> </ul>	 <p>24.10.2023</p> <p>By main contractor at KNP site</p>



					 <p>By subcontractor at KNP site</p>
EIA 3.9.1; EM&A Log 2.2	Pre-bored Socketed-H Piling	Kong Nga Po Site	Air	<ul style="list-style-type: none"> <li>• Cover dusty materials with impervious sheets</li> <li>• Exposed slopes covered with waterproof layers such as tarpaulin sheets or grout to reduce the potential for sediment laden runoff entering the drainage system.</li> </ul>	 <p>By main contractor at KNP site</p>

					 <p data-bbox="1541 638 1939 670">By main contractor at KNP site</p>
<p data-bbox="197 735 383 863">EIA 4.4.6; EM&amp;A Log 3.2</p>			<p data-bbox="884 735 965 767">Noise</p>	<ul data-bbox="1137 735 1518 1246" style="list-style-type: none"> <li data-bbox="1137 735 1518 911">• Regular inspection and maintenance of plant &amp; equipment in good condition</li> <li data-bbox="1137 927 1518 1054">• Deploy Quality Powered Mechanical Equipment (QPME) if possible</li> <li data-bbox="1137 1070 1518 1246">• Noise enclosure or acoustic shed should be used to cover stationary PME such as air</li> </ul>	 <p data-bbox="1541 1120 1939 1152">By main contractor at KNP site</p>

				<p>compressor or generator.</p>	
<p>EIA 5.6.1.2 and EM&amp;A Log 4.2</p>			<p>Water Quality</p>	<ul style="list-style-type: none"> <li>• Cover exposed slopes with impervious sheets or cement grout.</li> <li>• Wastewater pumped out of the excavation areas shall be treated to remove suspended solid prior to discharge.</li> <li>• Provide desilting/ sedimentation devices for wastewater treatment prior to discharge</li> </ul>	 <p>By main contractor at KNP site</p>  <p>By main contractor at KNP site</p>

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By main contractor at KNP site






By main contractor at KNP site



<p>EIA 5.6.1.3 and EM&amp;A Log 4.2</p>			<p>Water Quality</p>	<ul style="list-style-type: none"> <li>• Provide drip tray to prevent spillage of fuels.</li> </ul>	 <p>10-10-2023</p> <p>By main contractor at KNP site</p>
<p>EIA Table 10.11; EM&amp;A Table 9.1</p>			<p>Landscape and Visual Impact</p>	<ul style="list-style-type: none"> <li>• Preservation of existing trees will be undertaken in accordance with DEVB TC(W) 7/2015 and Guidelines for Tree Risk Assessment and Management Arrangement</li> <li>• Implement temporary traffic arrangement which control construction area to</li> </ul>	 <p>07-11-2023</p> <p>By main contractor at KNP site</p>

				minimize landscape and visual impacts	
EIA 3.9.1; EM&A Log 2.2	Construction of footings	Kong Nga Po Site	Air	<ul style="list-style-type: none"> <li>• Cover dusty materials with impervious sheets</li> <li>• Exposed slopes covered with waterproof layers such as tarpaulin sheets or grout to reduce the potential for sediment laden runoff entering the drainage system.</li> <li>• Provide wheel washing facility at site entrance</li> </ul>	 <p>By main contractor at KNP site</p>  <p>By main contractor at KNP site</p>

<p>EIA 4.4.6; EM&amp;A Log 3.2</p>			<p>Noise</p>	<ul style="list-style-type: none"> <li>Valid construction noise permit should be obtained and displayed on site</li> </ul>	 <p>By main contractor at KNP site</p>
<p>EIA 5.6.1.3 and EM&amp;A Log 4.2</p>			<p>Water Quality</p>	<ul style="list-style-type: none"> <li>Surface water from concrete batching areas and the rest of the site should be separated as far as possible.</li> </ul>	 <p>By subcontractor at KNP site</p>

					 <p>By subcontractor at KNP site</p>
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**APPENDIX B**  
**ACTION AND LIMIT LEVELS**

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**Appendix B - Action and Limit Levels****Table B-1 Action and Limit Levels for 1-hour TSP**

Monitoring station	Action Level (ug/m <sup>3</sup> )	Limit Level (ug/m <sup>3</sup> )
AM1	308	500
AM2	311	

**Table B-2 Action and Limit Levels for Construction Noise**

Time Period	Action Level	Limit Level
0700-1900 hours on normal weekdays	When one documented complaint is received	75 dB(A)

Noted:

If works are to be carried during restricted hours, the conditions stipulated in the construction noise permit issued by the Noise Control Authority have to be followed.

**APPENDIX C  
COPIES OF CALIBRATION  
CERTIFICATES**



## Calibration Certificate

Certificate No. : CSA27669  
Page : 1 of 2

### Information Provided by Customer

Customer : ETS - Testconsult Limited  
Address : 8/F., Block B, Veristrong Industrial Centre, 34 - 36 Au Pui Wan Street, Fotan, Shatin, Hong Kong

### Information of Unit-under-test (UUT)

Description : Sound Level Calibrator  
Manufacturer : RION  
Type : NC-73  
Equipment I.D. : ET/EN/002/01  
Serial No. : 10196943

### Laboratory Information

Lab. Ref. No. : Q/CAL/22/9442/I  
Date of Calibration : 7-Nov-2022  
Date of Issue : 10-Nov-2022  
Procedure : CQS/002/A  
Date of Receipt : 1-Nov-2022  
Calibration Location : Calibration Laboratory

### Calibration Condition

Ambient Temperature : (20±3) °C  
Stabilizing Time : 30 minutes  
Ambient Pressure : (1000±5) hPa  
Relative Humidity : (50±20) %  
Sampling : As received

### Reference equipment

- Multi-function sound calibrator, ET/2801/01
- Measuring Amplifier, ET/2702/01/01
- Signal generator, ET/2503/01
- Reference Oscilloscope, ET/2502/01

### Calibration specification

- To perform the calibration of sound level calibrator.

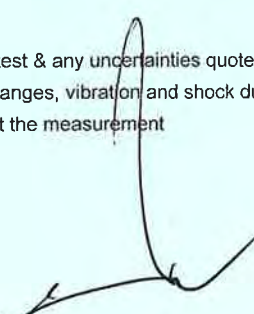
### Calibration result

- The results are detailed on the subsequent pages.

### Remarks

- The calibration results apply to the particular unit-under-test only.
- The values given in this calibration certificate only to the values measured at the time of test & any uncertainties quoted will not include allowance for the equipment long term drift, varifications with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement

Calibrated By : Tommy TAM & Tony MA  
(Technician)

Approved By:   
CHAN Chi Wai



## Calibration Certificate

Certificate No. : CSA27669

Page : 2 of 2

### Calibration Result:

1. Measured Sound Pressure Level:

Nominal Frequency (Hz)	Nominal Output Sound Pressure (dB)	Measured Output (dB)	Expanded Uncertainty (dB)	Coverage Factor
1000	94.0	94.0	0.13	2.0

2. Actual Output Frequency:

Nominal Frequency (Hz)	Nominal Output Sound Pressure (dB)	Measured Output (Hz)	Expanded Uncertainty (Hz)	Coverage Factor
1000	94.0	981.906	0.13	2.0

Remark:

- The uncertainty quoted is based on 95 % confidence level.
- Measured output are mean of three measurements.

\*\*\*End of certificate\*\*\*



## Calibration Certificate

Certificate No. : CSA34546  
Page : 1 of 3

### Information Provided by Customer

Customer : ETS - Testconsult Limited  
Address : 8/F., Block B, Veristrong Industrial Centre, 34 - 36 Au Pui Wan Street, Fotan, Shatin, Hong Kong

### Information of Unit-under-test (UUT)

	Sound Level Meter	Microphone	Pre-amplifier
Manufacturer	RION	RION	RION
Type	NL-52	UC-59	NH-25
Equipment I.D. no.	ET/EN/003/17	-	-
Serial No.	00264519	03558	64644
Adaptors used	-	-	-
Resolution	0.1 dB	-	-

### Laboratory Information

Lab. Ref. No. : Q/CAL/23/5141/I  
Date of Calibration : 28-Jun-2023  
Date of Issue : 28-Jun-2023  
Procedure : CQS/001/A  
Date of Receipt : 21-Jun-2023  
Calibration Location : Calibration Laboratory

### Calibration Condition

Ambient Temperature : (20 ± 3) °C  
Stabilizing Time : 30 minutes  
Ambient Pressure : (1000 ± 50) hPa  
Relative Humidity : (50 ± 20) %  
Sampling : As received

### Reference equipment

- Multi-function sound calibrator, ET/2801/01
- Signal generator, ET/2503/01

### Calibration specification

- To perform the calibration of linearity and frequency response by multi-function sound calibrator.

### Calibration result

- The results are detailed on the subsequent pages.

### Remarks

- The calibration results apply to the particular unit-under-test only.
- The values given in this calibration certificate only to the values measured at the time of test & any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement.

Calibrated By : Tony MA  
(Technician)

Approved By: CHAN Chi Wai



## Calibration Certificate

Certificate No. : CSA34546

Page : 2 of 3

### Calibration Result:

1 Reference Sound Pressure Level : (Unit in: dB)

Range / Mode			Reference Level	REF Frequency (kHz)	UUT Reading	Deviation	Expanded Uncertainty	Coverage Factor
A-Weighting	Self-cal	Before	94.0	1	93.7	-0.3	0.13	2.0
	Range	30 to 130	104.0		103.7	-0.3	0.13	2.0
	Mode	Fast	114.0		113.7	-0.3	0.13	2.0
A-Weighting	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.1	0.1	0.13	2.0
	Mode	Fast	114.0		114.1	0.1	0.13	2.0
	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.1	0.1	0.13	2.0
	Mode	Slow	114.0		114.1	0.1	0.13	2.0
C-Weighting	Self-cal	-	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.1	0.1	0.13	2.0
	Mode	Fast	114.0		114.0	0.0	0.13	2.0
	Self-cal	-	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.1	0.1	0.13	2.0
	Mode	Slow	114.0		114.0	0.0	0.13	2.0
Z-Weighting	Self-cal	-	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.1	0.1	0.13	2.0
	Mode	Fast	114.0		114.1	0.1	0.13	2.0
	Self-cal	-	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.1	0.1	0.13	2.0
	Mode	Slow	114.0		114.0	0.0	0.13	2.0

Remark:

- The uncertainty quoted is based on 95 % confidence level.
- UUT reading are mean of three measurements.
- Deviation = UUT Reading - Reference Level
- Laboratory reference multi-function sound calibrator was used to adjust the "Self cal" reading of UUT.

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## Calibration Certificate

Certificate No. : CSA34546

Page : 3 of 3

### Calibration Result:

#### Acoustic Sensitivity and Frequency Response:

#### 2 Frequency Response A-Weighting (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	Expanded Uncertainty	Coverage Factor
30 to 130	Fast	94	31.5	54.6	40.5	-14.1	0.29	2.6
			63	67.8	57.2	-10.6	0.22	2.3
			125	77.9	72.2	-5.7	0.13	2.0
			250	85.4	83.6	-1.8	0.12	2.0
			500	90.8	90.9	0.1	0.12	2.0
			1000 (Ref.)	94.0	94.0	0.0	0.13	2.0
			2000	95.1	94.0	-1.1	0.13	2.0
			4000	94.9	92.3	-2.6	0.13	2.0
			8000	92.9	85.4	-7.5	0.14	2.0
			12500	89.7	76.0	-13.7	0.14	2.0
16000	87.5	71.6	-15.9	0.16	2.0			

#### 3 Frequency Response C-Weighting (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	Expanded Uncertainty	Coverage Factor
30 to 130	Fast	94	31.5	91.0	74.6	-16.4	0.22	2.3
			63	93.2	82.4	-10.8	0.15	2.0
			125	93.8	88.1	-5.7	0.15	2.0
			250	94.0	92.2	-1.8	0.14	2.0
			500	94.0	94.1	0.1	0.12	2.0
			1000 (Ref.)	94.0	94.0	0.0	0.13	2.0
			2000	93.7	92.6	-1.1	0.13	2.0
			4000	93.1	90.5	-2.6	0.13	2.0
			8000	91.0	83.5	-7.5	0.14	2.0
			12500	87.8	74.1	-13.7	0.16	2.0
16000	85.6	69.8	-15.8	0.20	2.2			

#### 4 Frequency Response Z-Weighting (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	Expanded Uncertainty	Coverage Factor
30 to 130	Fast	94	31.5	94.0	77.6	-16.4	0.14	2.0
			63	94.0	83.2	-10.8	0.15	2.0
			125	94.0	88.3	-5.7	0.13	2.0
			250	94.0	92.2	-1.8	0.14	2.0
			500	94.0	94.0	0.0	0.12	2.0
			1000 (Ref.)	94.0	94.0	0.0	0.13	2.0
			2000	94.0	92.8	-1.2	0.13	2.0
			4000	94.0	91.3	-2.7	0.13	2.0
			8000	94.0	86.4	-7.6	0.14	2.0
			12500	94.0	80.7	-13.3	0.14	2.0
16000	94.0	79.4	-14.6	0.14	2.0			

Remark:

- Signal level at 1000 Hz is set as indication of reference sound pressure level.
- The uncertainty quoted is based on 95 % confidence level with coverage factor k=2.0.
- UUT reading are mean of three measurements.
- Deviation = UUT Reading - Reference Level

\*\*\*End of certificate\*\*\*





## Calibration Certificate

Certificate No. : CSA27977  
Page : 1 of 3

### Information Provided by Customer

Customer : ETS - Testconsult Limited  
Address : 8/F., Block B, Veristrong Industrial Centre, 34 - 36 Au Pui Wan Street, Fotan, Shatin, Hong Kong

### Information of Unit-under-test (UUT)

	Sound Level Meter	Microphone	Pre-amplifier
Manufacturer	RION	RION	-
Type	NL-52	UC-59	NH-25
Equipment I.D. no.	ET/EN/003/16	-	-
Serial No.	00253765	07824	43795
Adaptors used	-	-	-
Resolution	0.1 dB	-	-

### Laboratory Information

Lab. Ref. No. : Q/CAL/22/9824/1  
Date of Calibration : 22-Nov-2022  
Date of Issue : 23-Nov-2022  
Procedure : CQS/001/A  
Date of Receipt : 16-Nov-2022  
Calibration Location : Calibration Laboratory

### Calibration Condition

Ambient Temperature : (20±3) °C  
Stabilizing Time : 30 minutes  
Ambient Pressure : (1000±5) hPa  
Relative Humidity : (50±20) %  
Sampling : As received

### Reference equipment

- Multi-function sound calibrator, ET/2801/01
- Signal generator, ET/2503/01

### Calibration specification

- To perform the calibration of linearity and frequency response by multi-function sound calibrator.

### Calibration result

- The results are detailed on the subsequent pages.

### Remarks

- The calibration results apply to the particular unit-under-test only.
- The values given in this calibration certificate only to the values measured at the time of test & any uncertainties quoted will not include allowance for the equipment long term drift, variations with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement

Calibrated By : Tommy TAM  
(Technician)

Approved By: CHAN Chi Wai



## Calibration Certificate

Certificate No. : CSA27977

Page : 2 of 3

### Calibration Result:

1 Reference Sound Pressure Level : (Unit in: dB)

Range / Mode		Reference Level	REF Frequency (kHz)	UUT Reading	Deviation	Expanded Uncertainty	Coverage Factor	
A-Weighting	Self-cal	Before	94.0	1	94.3	0.3	0.13	2.0
	Range	30 to 130	104.0		104.3	0.3	0.13	2.0
	Mode	Fast	114.0		114.3	0.3	0.13	2.0
	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Fast	114.0		114.0	0.0	0.13	2.0
	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
Mode	Slow	114.0	114.0		0.0	0.13	2.0	
C-Weighting	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Fast	114.0		114.0	0.0	0.13	2.0
	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Slow	114.0		114.0	0.0	0.13	2.0
Z-Weighting	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Fast	114.0		114.0	0.0	0.13	2.0
	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Slow	114.0		114.0	0.0	0.13	2.0

Remark:

- The uncertainty quoted is based on 95 % confidence level.
- UUT reading are mean of three measurements.
- Deviation = UUT Reading - Reference Level
- Laboratory reference multi-function sound calibrator was used to adjust the "Self cal" reading of UUT.

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Calibration Certificate

Certificate No. : CSA27977

Page : 3 of 3

**Calibration Result:**

Acoustic Sensitivity and Frequency Response:

2 Frequency Response A-Weighting (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	IEC 61672-1:2002 class 1 Specification
30 to 130	Fast	94	31.5	54.6	54.7	0.1	-39.4 +/- 2.0
			63	67.8	68.0	0.2	-26.2 +/- 1.5
			125	77.9	78.1	0.2	-16.1 +/- 1.5
			250	85.4	85.5	0.1	-8.6 +/- 1.4
			500	90.8	90.9	0.1	-3.2 +/- 1.4
			1000 (Ref.)	94.0	94.0	0.0	0 +/- 1.1
			2000	95.1	95.0	-0.1	+1.2 +/- 1.6
			4000	94.9	94.1	-0.8	+1.0 +/- 1.6
			8000	92.9	89.8	-3.1	-1.1 (+2.1 ; -3.1)
			12500	89.7	83.7	-6.0	-4.3 (+3.0 ; -6.0)
16000	87.5	76.9	-10.6	-6.6 (+3.5 ; -17.0)			

3 Frequency Response C-Weighting : (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	IEC 61672-1:2002 class 1 Specification
30 to 130	Fast	94	31.5	91.0	91.1	0.1	-3.0 +/- 2.0
			63	93.2	93.4	0.2	-0.8 +/- 1.5
			125	93.8	94.0	0.2	-0.2 +/- 1.5
			250	94.0	94.1	0.1	0.0 +/- 1.4
			500	94.0	94.1	0.1	0.0 +/- 1.4
			1000 (Ref.)	94.0	94.0	0.0	0 +/- 1.1
			2000	93.7	93.6	-0.1	-0.2 +/- 1.6
			4000	93.1	92.3	-0.8	-0.8 +/- 1.6
			8000	91.0	87.9	-3.1	-3.0 (+2.1 ; -3.1)
			12500	87.8	81.8	-6.0	-6.2 (+3.0 ; -6.0)
16000	85.6	75.0	-10.6	-8.5 (+3.5 ; -17.0)			

4 Frequency Response Z-Weighting : (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	IEC 61672-1:2002 class 1 Specification
30 to 130	Fast	94	31.5	94.0	94.0	0.0	0.0 +/- 2.0
			63	94.0	94.1	0.1	0.0 +/- 1.5
			125	94.0	94.2	0.2	0.0 +/- 1.5
			250	94.0	94.1	0.1	0.0 +/- 1.4
			500	94.0	94.1	0.1	0.0 +/- 1.4
			1000 (Ref.)	94.0	94.0	0.0	0 +/- 1.1
			2000	94.0	93.8	-0.2	0.0 +/- 1.6
			4000	94.0	93.1	-0.8	0.0 +/- 1.6
			8000	94.0	90.9	-3.1	0.0 (+2.1 ; -3.1)
			12500	94.0	88.2	-5.8	0.0 (+3.0 ; -6.0)
16000	94.0	84.6	-9.4	0.0 (+3.5 ; -17.0)			

- Expanded uncertainty of measurement:

	Range (Hz)	(dB)	Range (Hz)	(dB)
94 dB	31.5	0.20	2000	0.13
	63	0.15	4000	0.13
	125	0.15	8000	0.14
	250	0.12	12500	0.16
	500	0.12	16000	0.16
	1000	0.13		

Remark:

- Manufacturer specification: IEC 61672 class 1
- Signal level at 1000 Hz is set as indication of reference sound pressure level.
- The uncertainty quoted is based on 95 % confidence level with coverage factor k=2.0.
- UUT reading are mean of three measurements.
- Deviation = UUT Reading - Reference Level





## Calibration Certificate

Certificate No. : CSA32590  
Page : 1 of 3

### Information Provided by Customer

Customer : ETS - TESTCONSULT LIMITED  
Address : 8/F., Block B, Veristrong Industrial Centre, 34 - 36 Au Pui Wan Street, Fotan, Shatin, Hong Kong

### Information of Unit-under-test (UUT)

	Sound Level Meter	Microphone	Pre-amplifier
Manufacturer	RION	RION	-
Type	NL-52	UC-59	NH-25
Equipment I.D. no.	ET/EN/003/18	-	-
Serial No.	00264520	09668	64646
Adaptors used	-	-	-
Resolution	0.1 dB	-	-

### Laboratory Information

Lab. Ref. No. : Q/CAL/23/2956/1  
Date of Calibration : 19-Apr-2023  
Date of Issue : 20-Apr-2023  
Procedure : CQS/001/A  
Date of Receipt : 13-Apr-2023  
Calibration Location : Calibration Laboratory

### Calibration Condition

Ambient Temperature : (20 ± 3) °C  
Stabilizing Time : 30 minutes  
Ambient Pressure : (1000 ± 50) hPa  
Relative Humidity : (50 ± 20) %  
Sampling : As received

### Reference equipment

- Multi-function sound calibrator, ET/2801/01
- Signal generator, ET/2503/01

### Calibration specification

- To perform the calibration of linearity and frequency response by multi-function sound calibrator.

### Calibration result

- The results are detailed on the subsequent pages.

### Remarks

- The calibration results apply to the particular unit-under-test only.
- The values given in this calibration certificate only to the values measured at the time of test & any uncertainties quoted will not include allowance for the equipment long term drift, verifications with environmental changes, vibration and shock during transportation, overloading, mis-handling, or the capability of any other laboratory to repeat the measurement

Calibrated By : Tommy TAM  
(Technician)

Approved By: CHAN Chi Wai



## Calibration Certificate

Certificate No. : CSA32590

Page : 2 of 3

### Calibration Result:

1 Reference Sound Pressure Level : (Unit in: dB)

Range / Mode			Reference Level	REF Frequency (kHz)	UUT Reading	Deviation	Expanded Uncertainty	Coverage Factor
A-Weighting	Self-cal	Before	94.0	1	94.8	0.8	0.13	2.0
	Range	30 to 130	104.0		104.8	0.8	0.13	2.0
	Mode	Fast	114.0		114.8	0.8	0.13	2.0
A-Weighting	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.1	0.1	0.13	2.0
	Mode	Fast	114.0		114.0	0.0	0.13	2.0
	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.1	0.1	0.13	2.0
	Mode	Slow	114.0		114.0	0.0	0.13	2.0
C-Weighting	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Fast	114.0		114.0	0.0	0.13	2.0
	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Slow	114.0		114.0	0.0	0.13	2.0
Z-Weighting	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Fast	114.0		114.0	0.0	0.13	2.0
	Self-cal	After	94.0	1	94.0	0.0	0.13	2.0
	Range	30 to 130	104.0		104.0	0.0	0.13	2.0
	Mode	Slow	114.0		114.0	0.0	0.13	2.0

Remark:

- The uncertainty quoted is based on 95 % confidence level.
- UUT reading are mean of three measurements.
- Deviation = UUT Reading - Reference Level
- Laboratory reference multi-function sound calibrator was used to adjust the "Self cal" reading of UUT.

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Calibration Certificate

Certificate No. : CSA32590

Page : 3 of 3

**Calibration Result:**

**Acoustic Sensitivity and Frequency Response:**

2 Frequency Response A-Weighting (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	IEC 61672-1:2002 class 1 Specification
30 to 130	Fast	94	31.5	54.6	54.7	0.1	-39.4 +/- 2.0
			63	67.8	67.9	0.1	-26.2 +/- 1.5
			125	77.9	78.0	0.1	-16.1 +/- 1.5
			250	85.4	85.4	0.0	-8.6 +/- 1.4
			500	90.8	90.8	0.0	-3.2 +/- 1.4
			1000 (Ref.)	94.0	94.0	0.0	0 +/- 1.1
			2000	95.1	95.2	0.1	+1.2 +/- 1.6
			4000	94.9	94.9	0.0	+1.0 +/- 1.6
			8000	92.9	92.0	-0.9	-1.1 (+2.1 ; -3.1)
			12500	89.7	85.1	-4.6	-4.3 (+3.0 ; -6.0)
16000	87.5	79.8	-7.7	-6.6 (+3.5 ; -17.0)			

3 Frequency Response C-Weighting : (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	IEC 61672-1:2002 class 1 Specification
30 to 130	Fast	94	31.5	91.0	90.9	-0.1	-3.0 +/- 2.0
			63	93.2	93.2	0.0	-0.8 +/- 1.5
			125	93.8	93.9	0.1	-0.2 +/- 1.5
			250	94.0	94.0	0.0	0.0 +/- 1.4
			500	94.0	94.0	0.0	0.0 +/- 1.4
			1000 (Ref.)	94.0	94.0	0.0	0 +/- 1.1
			2000	93.7	93.8	0.1	-0.2 +/- 1.6
			4000	93.1	93.1	0.0	-0.8 +/- 1.6
			8000	91.0	90.1	-0.9	-3.0 (+2.1 ; -3.1)
			12500	87.8	83.2	-4.6	-6.2 (+3.0 ; -6.0)
16000	85.6	77.9	-7.7	-8.5 (+3.5 ; -17.0)			

4 Frequency Response Z-Weighting : (Unit in: dB)

Range	Mode	Applied Level	Frequency (Hz)	Reference Level	UUT Reading	Deviation	IEC 61672-1:2002 class 1 Specification
30 to 130	Fast	94	31.5	94.0	94.0	0.0	0.0 +/- 2.0
			63	94.0	94.0	0.0	0.0 +/- 1.5
			125	94.0	94.0	0.0	0.0 +/- 1.5
			250	94.0	94.0	0.0	0.0 +/- 1.4
			500	94.0	94.0	0.0	0.0 +/- 1.4
			1000 (Ref.)	94.0	94.0	0.0	0 +/- 1.1
			2000	94.0	94.0	0.0	0.0 +/- 1.6
			4000	94.0	93.9	0.0	0.0 +/- 1.6
			8000	94.0	93.0	-1.0	0.0 (+2.1 ; -3.1)
			12500	94.0	89.7	-4.3	0.0 (+3.0 ; -6.0)
16000	94.0	87.6	-6.4	0.0 (+3.5 ; -17.0)			

- Expanded uncertainty of measurement:

	Range (Hz)	(dB)	Range (Hz)	(dB)
	94 dB	31.5	0.15	2000
63		0.15	4000	0.13
125		0.15	8000	0.14
250		0.14	12500	0.14
500		0.12	16000	0.14
1000		0.13		

- Remark:
- Manufacturer specification: IEC 61672 class 1
  - Signal level at 1000 Hz is set as indication of reference sound pressure level.
  - The uncertainty quoted is based on 95 % confidence level with coverage factor k=2.0.
  - UUT reading are mean of three measurements.
  - Deviation = UUT Reading - Reference Level



# Certificate of Calibration

Calibration Certification Information			
Cal. Date: January 17, 2023	Rootsmeter S/N: 438320	Ta: 294	°K
Operator: Jim Tisch		Pa: 741.4	mm Hg
Calibration Model #: TE-5025A	Calibrator S/N: <b>4128</b>		

Run	Vol. Init (m3)	Vol. Final (m3)	ΔVol. (m3)	ΔTime (min)	ΔP (mm Hg)	ΔH (in H2O)
1	1	2	1	1.4370	3.2	2.00
2	3	4	1	1.0170	6.4	4.00
3	5	6	1	0.9140	8.0	5.00
4	7	8	1	0.8640	8.8	5.50
5	9	10	1	0.7170	12.8	8.00

Data Tabulation					
Vstd (m3)	Qstd (x-axis)	$\sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)}$ (y-axis)	Va	Qa (x-axis)	$\sqrt{\Delta H \left( \frac{Ta}{Pa} \right)}$ (y-axis)
0.9846	0.6852	1.4063	0.9957	0.6929	0.8905
0.9803	0.9639	1.9888	0.9914	0.9748	1.2594
0.9782	1.0702	2.2235	0.9892	1.0823	1.4081
0.9771	1.1309	2.3321	0.9881	1.1437	1.4768
0.9718	1.3553	2.8126	0.9827	1.3706	1.7811
<b>QSTD</b>	m=	<b>2.09676</b>	<b>QA</b>	m=	<b>1.31296</b>
	b=	<b>-0.03027</b>		b=	<b>-0.01917</b>
	r=	<b>0.99991</b>		r=	<b>0.99991</b>

Calculations			
Vstd=	$\Delta Vol \left( \frac{Pa - \Delta P}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)$	Va=	$\Delta Vol \left( \frac{Pa - \Delta P}{Pa} \right)$
Qstd=	Vstd/ΔTime	Qa=	Va/ΔTime
For subsequent flow rate calculations:			
Qstd=	$1/m \left( \left( \sqrt{\Delta H \left( \frac{Pa}{Pstd} \right) \left( \frac{Tstd}{Ta} \right)} \right) - b \right)$	Qa=	$1/m \left( \left( \sqrt{\Delta H \left( \frac{Ta}{Pa} \right)} \right) - b \right)$

Standard Conditions	
Tstd:	298.15 °K
Pstd:	760 mm Hg
Key	
ΔH:	calibrator manometer reading (in H2O)
ΔP:	rootsmeter manometer reading (mm Hg)
Ta:	actual absolute temperature (°K)
Pa:	actual barometric pressure (mm Hg)
b:	intercept
m:	slope

RECALIBRATION
US EPA recommends annual recalibration per 1998 40 Code of Federal Regulations Part 50 to 51, Appendix B to Part 50, Reference Method for the Determination of Suspended Particulate Matter in the Atmosphere, 9.2.17, page 30





**TEST REPORT**

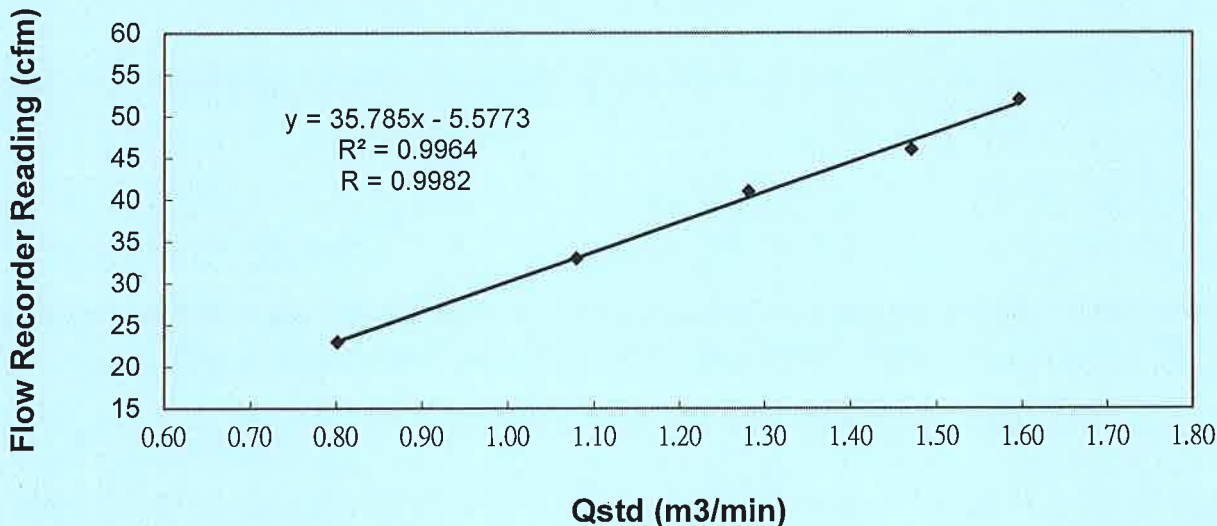
**Calibration Report  
of  
High Volume Air Sampler**

**Manufacturer** : Graseby GMW Date of Calibration : 22 August 2023  
**Serial No.** : 1180 ( ET / EA / 003 / 04 ) Calibration Due Date : 21 October 2023  
**Method** : Based on Operations Manual for the 5-point calibration using standard calibration kit manufactured by Tisch TE-5025 A

**Results** :

Flow recorder reading (cfm)	52	46	41	33	23
Qstd (Actual flow rate, m <sup>3</sup> /min)	1.60	1.47	1.28	1.08	0.80
Pressure :	754.64 mm Hg		Temp. :	303 K	

**Sampler 1180 Calibration Curve  
Site: Tuen Mun (TM-RA2)**



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies\* / ~~does not comply\*~~ with the specified requirements and is deemed acceptable\* / unacceptable\* for use.

Calibrated by : MAK, Kei Wai  
 MAK, Kei Wai  
 (Assistant Supervisor)

Checked by : LAU, Chi Leung  
 LAU, Chi Leung  
 (Environmental Team Leader)





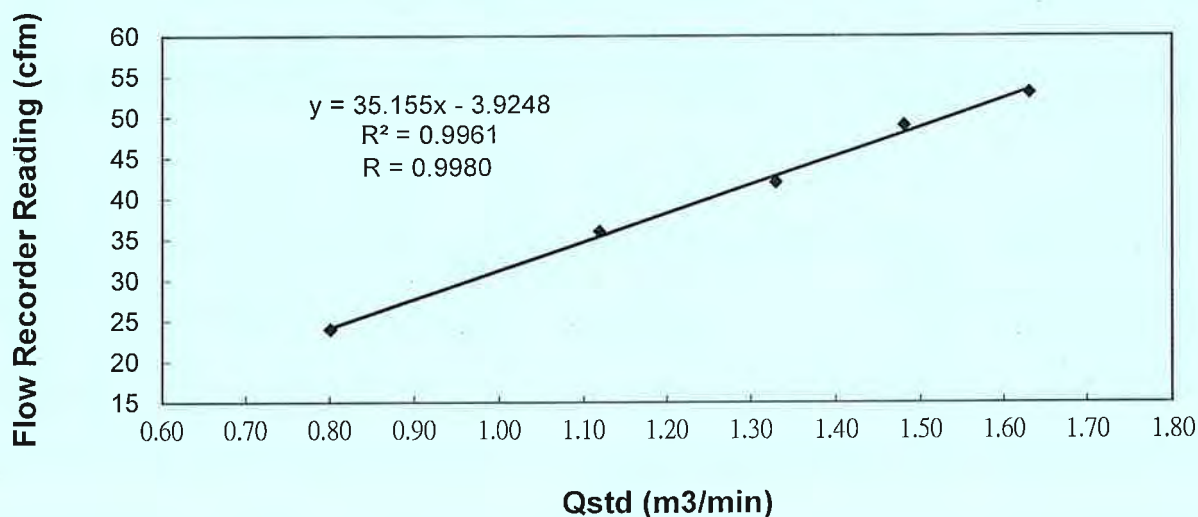
TEST REPORT

Calibration Report  
of  
High Volume Air Sampler

Manufacturer : Graseby GMW Date of Calibration : 21 October 2023  
Serial No. : 1180 ( ET / EA / 003 / 04 ) Calibration Due Date : 20 December 2023  
Method : Based on Operations Manual for the 5-point calibration using standard calibration kit  
manufactured by Tisch TE-5025 A

Results	Flow recorder reading (cfm)	53	49	42	36	24
	Qstd (Actual flow rate, m <sup>3</sup> /min)	1.63	1.48	1.33	1.12	0.80
	Pressure : 763.86 mm Hg	Temp. : 296 K				

Sampler 1180 Calibration Curve  
Site: Tuen Mun (TM-RA2)



Acceptance Criteria : Correlation coefficient (r) of the calibration curve greater than 0.990 after a 5-point calibration

The high volume sampler complies\* / does not comply\* with the specified requirements and is deemed acceptable\* unacceptable\* for use.

Calibrated by : Mak Kei Wai  
MAK, Kei Wai  
(Assistant Supervisor)

Checked by : LAU, Chi Leung  
LAU, Chi Leung  
(Environmental Team Leader)



TEST REPORT

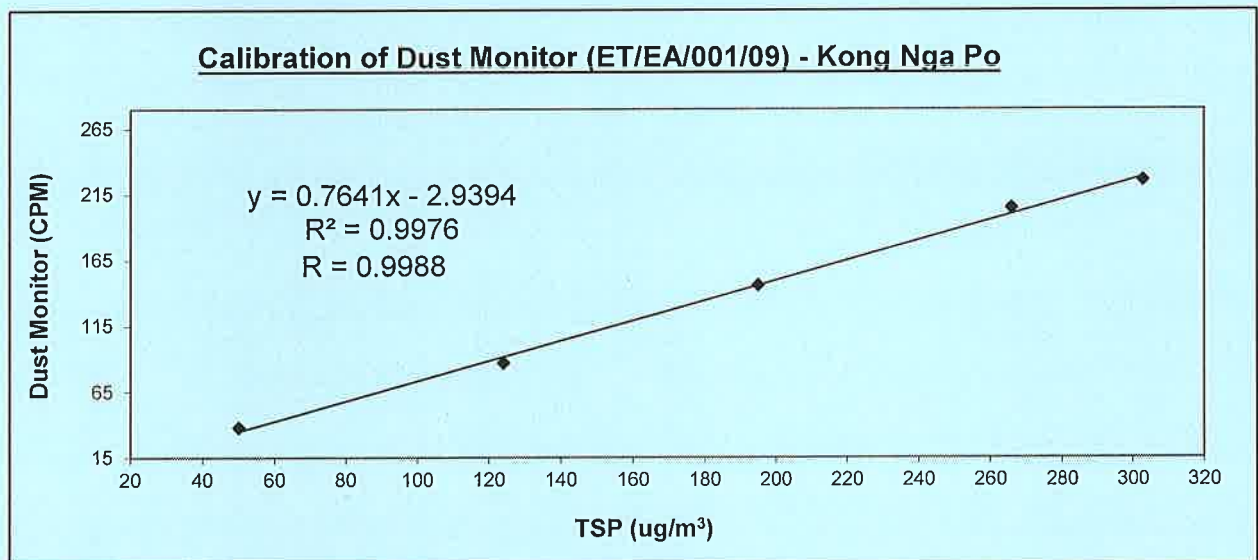
Internal Calibration Report  
of  
Dust Monitor

Manufacturer : SIBATA (LD-3B) Date of Calibration : 29 September 2023

Serial No. : 155331 (ET/EA/001/09) Calibration Due Date : 28 November 2023

Method : Parallel measurement (Five-point calibration) by placing the Dust Monitor and High Volume Air Samper together under the same environmental condition

Results	Dust Monitor (CPM)	38	87	146	205	226
	TSP (ug/m <sup>3</sup> )	50	124	195	266	303
	High Volume Air Sampler Serial No.: 1180	Calibration Due Date: 21 October 2023				



Acceptance Criteria : Correlation coefficient (R) of the calibration curve greater than 0.990 after a five-point calibration

The Dust Trak Monitor complies \* / ~~does not comply~~ \* with the internal calibration procedures and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by : CHENG, Hei Man  
(Technician)

Checked by : LAU, Chi Leung  
(Environmental Team Leader)



**TEST REPORT**

**Internal Calibration Report  
of  
Dust Monitor**

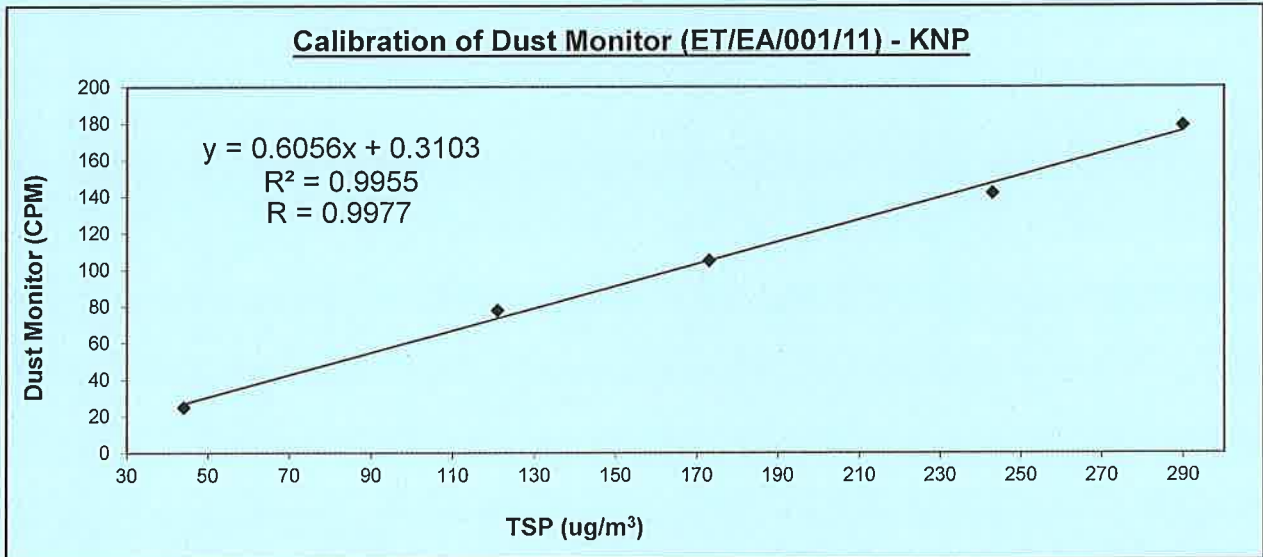
**Manufacturer** : SIBATA (LD-3B)                      Date of Calibration : 29 September 2023

**Serial No.** : 255863 (ET/EA/001/11)                      Calibration Due Date : 28 November 2023

**Method** : Parallel measurement (Five-point calibration) by placing the Dust Monitor and High Volume Air Samper together under the same environmental condition


**Results** :

Dust Monitor (CPM)	25	78	105	142	179
TSP (ug/m <sup>3</sup> )	44	121	173	243	290
High Volume Air Sampler Serail No.:1180	Calibration Due Date: 21 October 2023				



Acceptance Criteria : Correlation coefficient (R) of the calibration curve greater than 0.990 after a five-point calibration

The Dust Trak Monitor complies \* / ~~does not comply~~ \* with the internal calibration procedures and is deemed acceptable \* / ~~unacceptable~~ \* for use.

Calibrated by :   
CHENG, Hei Man  
(Technician)

Checked by :   
LAU, Chi Leung  
(Environmental Team Leader)

**APPENDIX D  
ENVIRONMENTAL MONITORING  
SCHEDULES**

**Environmental Team for Site Formation and Infrastructure Works for Police Facilities in Kong Nga Po  
Impact Air Quality and Noise Monitoring Schedule  
October-2023**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
1-Oct	2-Oct	3-Oct	4-Oct	5-Oct	6-Oct	7-Oct
			<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)			
8-Oct	9-Oct	10-Oct	11-Oct	12-Oct	13-Oct	14-Oct
		<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)				
15-Oct	16-Oct	17-Oct	18-Oct	19-Oct	20-Oct	21-Oct
	<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14))			<b>1-hr TSP x3</b> (AM1, AM2)		
22-Oct	23-Oct	24-Oct	25-Oct	26-Oct	27-Oct	28-Oct
			<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)			
29-Oct	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov	4-Nov
		<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)				

**Environmental Team for Site Formation and Infrastructure Works for Police Facilities in Kong Nga Po  
Impact Air Quality and Noise Monitoring Schedule  
November-2023**

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
29-Oct	30-Oct	31-Oct	1-Nov	2-Nov	3-Nov	4-Nov
		<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)				
5-Nov	6-Nov	7-Nov	8-Nov	9-Nov	10-Nov	11-Nov
	<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)				<b>1-hr TSP x3</b> (AM1, AM2)	
12-Nov	13-Nov	14-Nov	15-Nov	16-Nov	17-Nov	18-Nov
				<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)		
19-Nov	20-Nov	21-Nov	22-Nov	23-Nov	24-Nov	25-Nov
			<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)			
26-Nov	27-Nov	28-Nov	29-Nov	30-Nov	1-Dec	2-Dec
		<b>1-hr TSP x3</b> (AM1, AM2)  <b>NM</b> (NM9 to NM14)				

**APPENDIX E  
AIR QUALITY MONITORING RESULTS  
AND GRAPHICAL PRESENTATION**

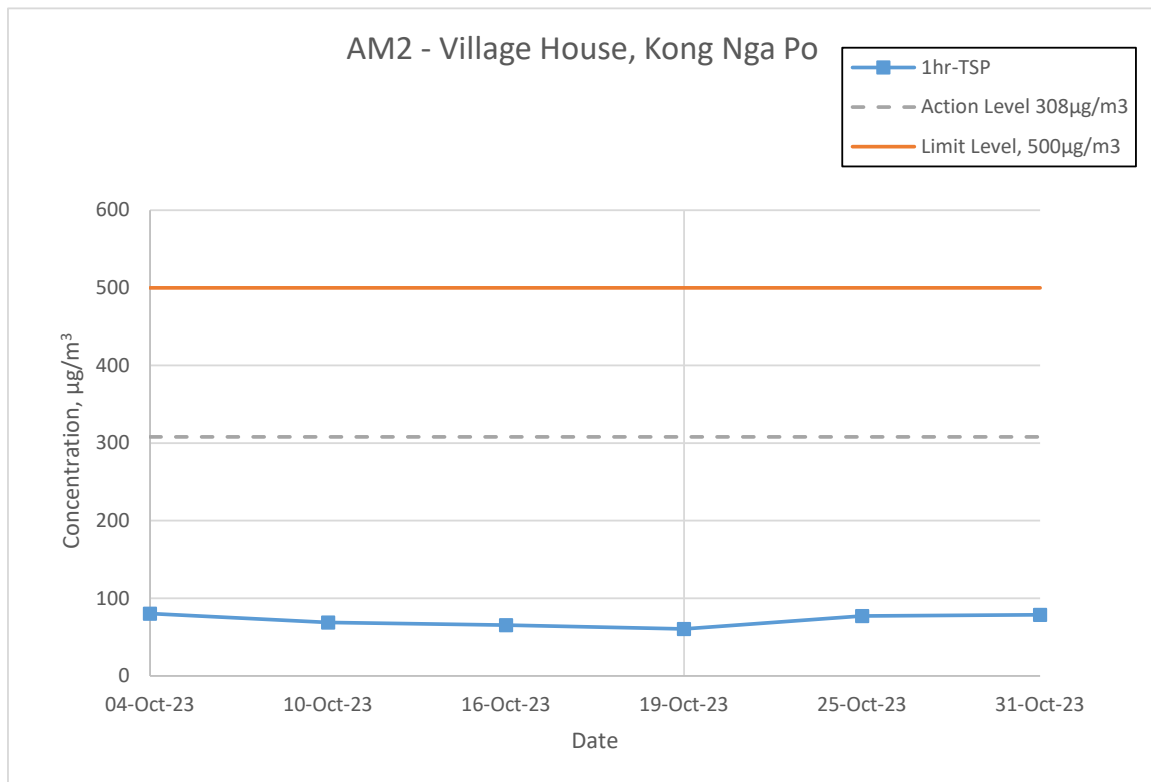
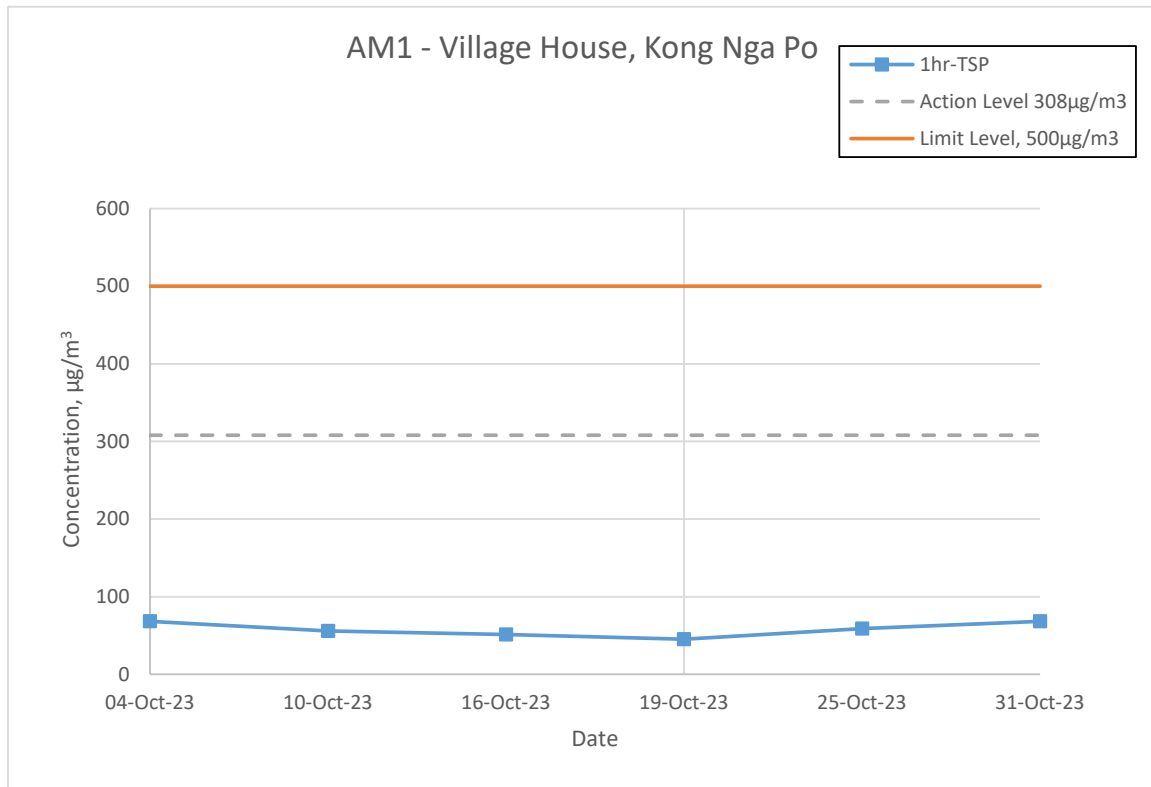


Appendix E - 1-hour TSP Monitoring Results

Location AM1 - Village House, Kong Nga Po			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
04-Oct-23	8:40	Fine	68
	9:40		71
	10:40		71
10-Oct-23	8:40	Cloudy	56
	9:40		57
	10:40		57
16-Oct-23	8:40	Fine	51
	9:40		50
	10:40		50
19-Oct-23	8:45	Drizzle	45
	9:45		47
	10:45		47
25-Oct-23	8:40	Fine	59
	9:40		62
	10:40		62
31-Oct-23	8:40	Fine	68
	9:40		70
	10:40		71
		Minimum	45
		Maximum	71
		Average	59

Location AM2 - Village House, Kong Nga Po			
Date	Time	Weather	Particulate Concentration ( $\mu\text{g}/\text{m}^3$ )
04-Oct-23	10:00	Fine	80
	11:00		79
	13:30		79
10-Oct-23	10:00	Cloudy	69
	11:00		72
	13:00		74
16-Oct-23	10:00	Fine	66
	11:00		69
	13:30		69
19-Oct-23	9:00	Drizzle	61
	10:00		64
	11:00		62
25-Oct-23	10:00	Fine	77
	11:00		75
	13:13		77
31-Oct-23	10:00	Fine	79
	11:00		82
	12:00		82
		Minimum	61
		Maximum	82
		Average	73

## 1-hr TSP Concentration Levels



**APPENDIX F  
NOISE MONITORING RESULTS AND  
GRAPHICAL PRESENTATION**

## Appendix F -Noise Monitoring Results

Location NM9 - Village House, Kong Nga Po									
Date	Weather	Wind Speed (m/s)	StartTime	Unit: dB(A) (5-min)			Average	Limit Level	Baseline
				L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
04-Oct-23	Fine	0.2	9:15	60.1	63.9	55.3	60.9	75.0	55.9
				61.9	63.2	55.8			
				60.8	64.7	56.2			
				60.7	64.4	55.7			
				60.8	64.3	55.6			
10-Oct-23	Cloudy	0.2	9:15	61.0	65.0	54.4	58.0	75.0	55.9
				58.4	60.2	54.8			
				58.7	60.4	55.1			
				57.9	59.8	54.4			
				57.6	59.5	54.2			
16-Oct-23	Cloudy	0.2	9:15	58.0	59.7	54.6	55.9	75.0	55.9
				57.1	58.9	54.0			
				57.4	59.2	54.8			
				54.7	55.6	53.8			
				56.5	58.8	53.7			
25-Oct-23	Fine	0.2	9:15	54.5	56.6	53.5	57.1	75.0	55.9
				55.4	57.4	54.2			
				56.0	58.2	54.0			
				57.7	60.3	54.1			
				57.4	60.7	52.6			
31-Oct-23	Fine	0.2	9:15	55.0	56.8	52.6	58.3	75.0	55.9
				57.8	61.2	52.5			
				58.4	62.3	52.6			
				54.7	58.0	49.1			
				58.4	59.8	54.7			

Location NM10 - Village House, Kong Nga Po									
Date	Weather	Wind Speed (m/s)	Time	Unit: dB(A) (5-min)			Average	Limit Level	Baseline
				L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
04-Oct-23	Fine	0.2	8:40	56.4	58.0	53.2	56.5	75.0	52.8
				55.9	57.4	52.1			
				56.0	57.6	52.4			
				56.2	57.9	52.9			
				57.0	58.5	53.6			
10-Oct-23	Cloudy	0.2	8:40	57.1	58.6	53.5	52.5	75.0	52.8
				52.7	54.8	48.6			
				53.1	55.2	48.9			
				51.7	53.6	47.2			
				51.9	53.9	47.5			
16-Oct-23	Cloudy	0.2	8:40	52.2	54.0	48.2	51.7	75.0	52.8
				51.7	53.6	48.0			
				51.4	53.2	47.7			
				50.9	52.5	47.1			
				51.0	52.8	47.4			
25-Oct-23	Fine	0.2	8:40	52.5	54.3	48.7	50.9	75.0	52.8
				50.4	52.8	47.7			
				51.1	53.4	48.0			
				50.9	52.9	47.8			
				50.2	52.3	47.4			
31-Oct-23	Fine	0.2	8:40	51.5	53.8	48.6	51.1	75.0	52.8
				51.4	53.5	48.2			
				51.4	52.8	47.7			
				50.8	52.4	47.3			
				50.2	51.7	46.9			

**Location NM11 - Village House, Kong Nga Po**

Date	Weather	Wind Speed (m/s)	Time	Unit: dB(A) (5-min)			Average	Limit Level	Baseline
				L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
04-Oct-23	Fine	0.2	11:00	45.8	47.7	43.4	44.3	75.0	46.4
				44.1	45.8	42.2			
				43.7	45.4	41.6			
				42.8	44.5	40.6			
				42.8	44.4	41.3			
				45.6	47.7	42.5			
10-Oct-23	Cloudy	0.2	11:00	48.2	49.7	44.5	48.3	75.0	46.4
				47.9	49.3	44.2			
				48.4	49.9	45.0			
				48.8	50.6	45.4			
				48.6	50.4	45.1			
				47.6	49.1	44.4			
16-Oct-23	Cloudy	0.2	11:00	46.6	49.0	43.5	47.7	75.0	46.4
				47.6	48.8	45.8			
				48.6	50.4	44.6			
				49.0	51.5	45.3			
				47.3	48.7	45.5			
				46.1	47.9	43.2			
25-Oct-23	Fine	0.2	11:00	45.8	48.2	42.6	46.4	75.0	46.4
				47.8	51.1	41.9			
				47.4	49.5	44.4			
				45.7	47.6	43.6			
				45.0	47.1	43.2			
				45.8	47.9	43.3			
31-Oct-23	Fine	0.2	11:00	46.2	48.8	42.7	47.3	75.0	46.4
				47.4	49.6	43.8			
				47.5	49.8	44.1			
				48.2	50.4	44.7			
				47.0	48.2	42.9			
				47.1	48.4	43.0			

**Location NM12 - Village House, Kong Nga Po**

Date	Weather	Wind Speed (m/s)	StartTime	Unit: dB(A) (5-min)			Average	Limit Level	Baseline
				L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
04-Oct-23	Fine	0.2	10:00	48.8	50.2	46.0	49.8	75.0	54.7
				49.4	50.9	46.4			
				50.2	51.4	46.7			
				50.7	51.9	47.1			
				49.9	51.2	46.8			
				49.4	50.9	46.6			
10-Oct-23	Cloudy	0.2	10:00	50.2	52.4	46.8	50.3	75.0	54.7
				49.7	51.6	46.4			
				49.8	51.8	46.6			
				50.7	52.8	47.1			
				50.9	53.0	47.4			
				50.5	52.6	47.2			
16-Oct-23	Cloudy	0.2	10:00	47.2	48.8	45.4	47.4	75.0	54.7
				46.9	48.6	45.2			
				47.2	48.6	46.1			
				47.4	48.7	46.2			
				47.5	48.7	46.3			
				48.0	49.2	46.8			
25-Oct-23	Fine	0.2	10:00	48.4	50.1	45.9	48.6	75.0	54.7
				47.9	49.6	45.2			
				48.8	50.6	46.1			
				48.9	50.8	46.4			
				48.2	49.9	45.7			
				49.4	51.5	47.0			
31-Oct-23	Fine	0.2	10:00	49.4	52.1	45.8	49.9	75.0	54.7
				49.7	52.5	46.1			
				49.0	51.8	45.3			
				50.2	52.4	46.3			
				50.5	52.7	46.6			
				50.2	52.5	46.5			



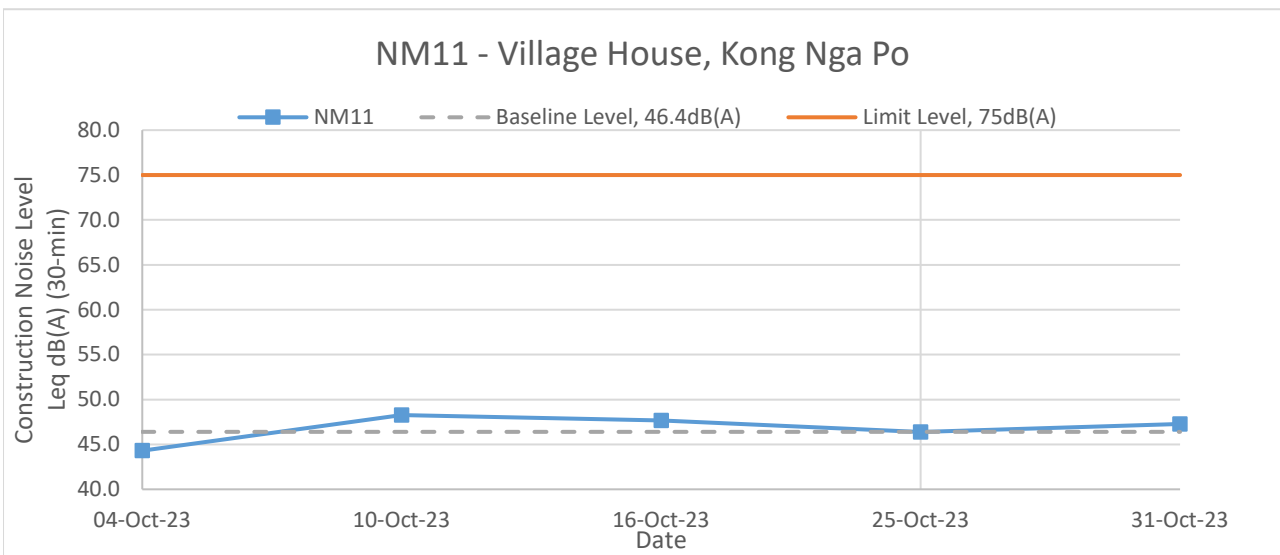
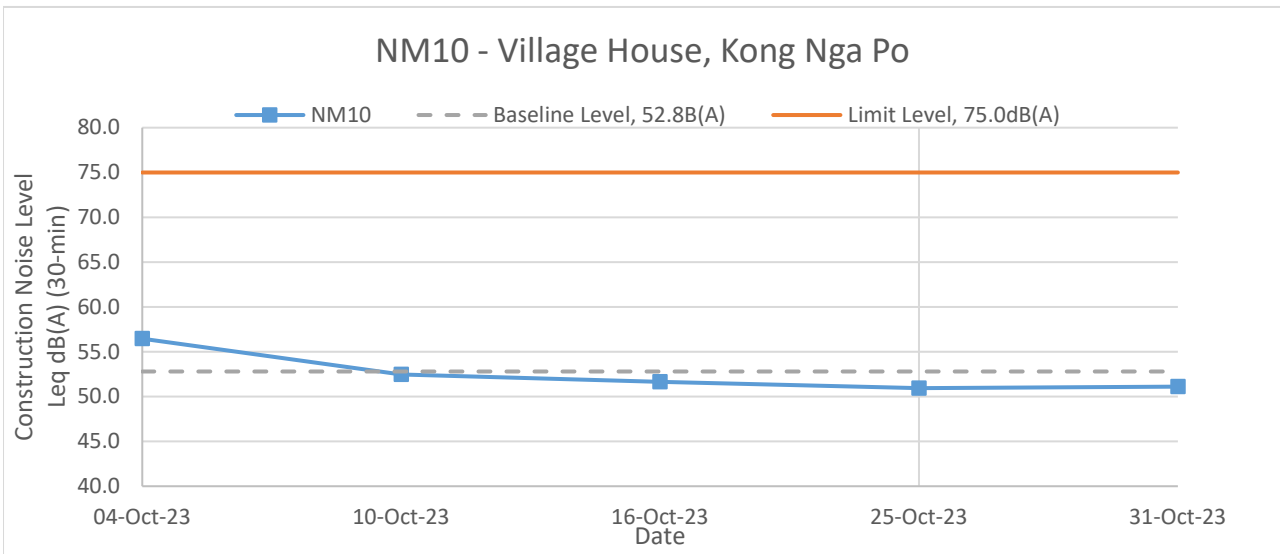
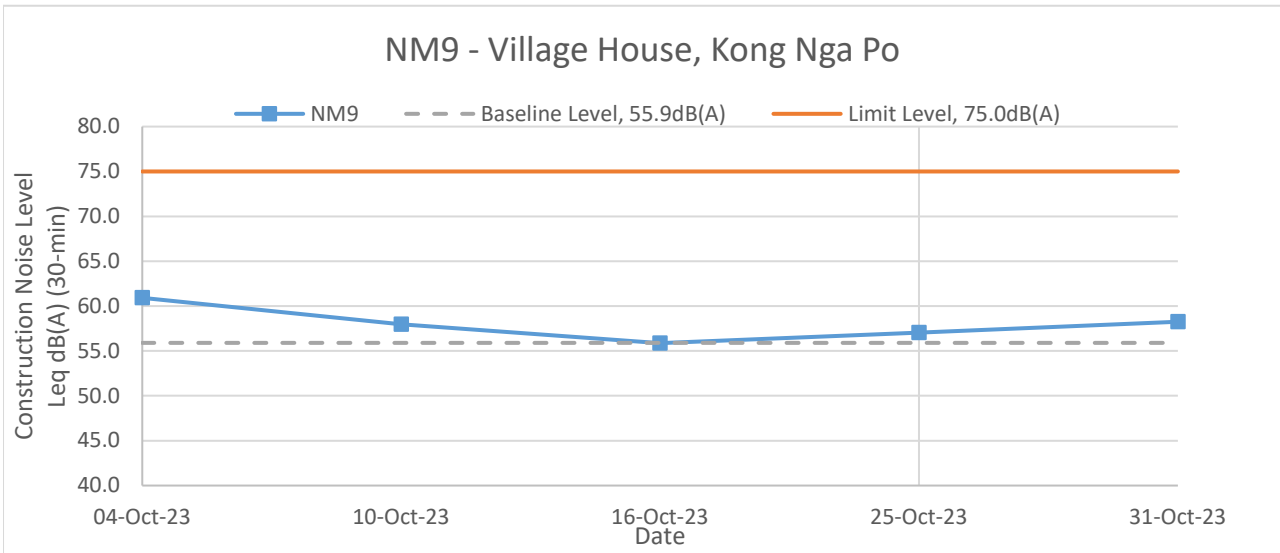
**Location NM13 - Village House, Kong Nga Po**

Date	Weather	Wind Speed (m/s)	Time	Unit: dB(A) (5-min)			Average	Limit Level	Baseline
				L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
04-Oct-23	Fine	0.2	14:30	57.2	59.4	53.8	57.9	75.0	61.3
				58.9	60.3	54.4			
				58.4	59.8	54.1			
				58.0	59.6	53.9			
				57.7	59.2	54.0			
10-Oct-23	Cloudy	0.2	14:30	57.0	58.7	53.6	56.0	75.0	61.3
				55.7	57.4	52.2			
				56.3	58.1	52.5			
				56.1	57.9	52.4			
				56.6	58.5	52.8			
16-Oct-23	Cloudy	0.2	14:25	55.2	57.3	52.0	57.9	75.0	61.3
				56.2	57.9	52.6			
				56.8	58.4	52.3			
				55.9	57.4	51.8			
				56.0	57.5	52.0			
25-Oct-23	Fine	0.2	14:30	54.6	56.6	50.9	54.3	75.0	61.3
				54.8	56.9	51.4			
				54.2	47.0	50.5			
				53.9	56.4	50.2			
				55.1	57.5	51.9			
31-Oct-23	Fine	0.2	14:30	53.8	56.2	50.8	56.2	75.0	61.3
				54.0	56.8	51.1			
				56.7	58.9	52.4			
				57.0	59.4	52.8			
				55.8	57.6	51.7			

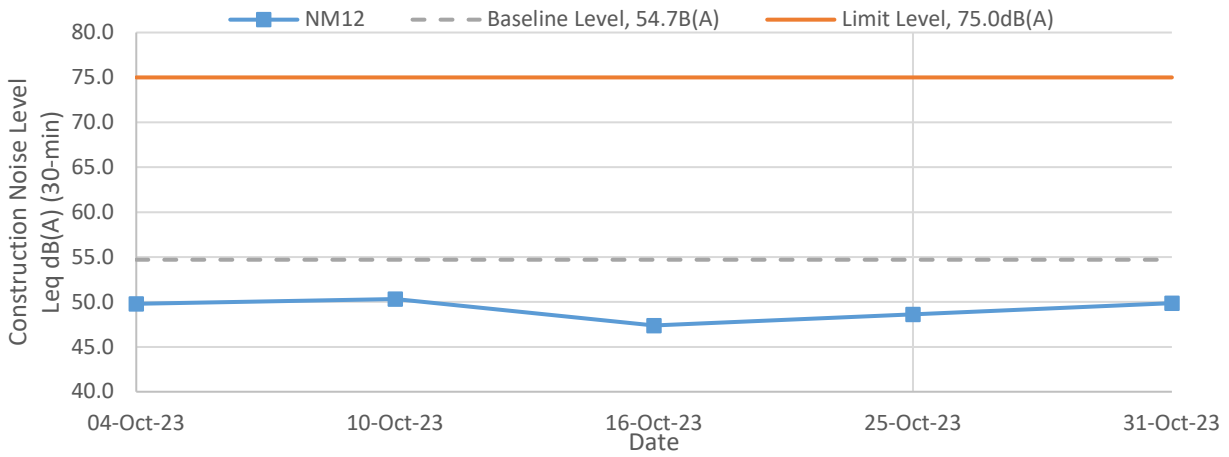
**Location NM14 - Village House, near Man Kam To Road**

Date	Weather	Wind Speed (m/s)	Time	Unit: dB(A) (5-min)			Average	Limit Level	Baseline
				L <sub>eq</sub>	L <sub>10</sub>	L <sub>90</sub>	L <sub>eq</sub>	L <sub>eq</sub>	L <sub>eq</sub>
04-Oct-23	Fine	0.2	13:50	46.3	48.5	42.4	48.2	75.0	59.6
				47.2	49.0	42.8			
				48.1	49.7	43.8			
				48.4	49.9	44.1			
				49.2	51.0	45.4			
10-Oct-23	Cloudy	0.2	13:50	49.4	51.4	45.6	46.7	75.0	59.6
				47.7	49.2	44.6			
				46.8	48.7	44.2			
				46.6	48.4	43.9			
				46.1	47.6	43.5			
16-Oct-23	Cloudy	0.2	13:50	46.4	47.8	43.8	45.5	75.0	59.6
				43.7	46.0	40.2			
				44.5	46.4	40.9			
				46.1	47.7	42.5			
				46.3	47.9	42.8			
25-Oct-23	Fine	0.2	13:50	45.9	47.4	42.6	47.8	75.0	59.6
				46.0	47.6	42.5			
				46.9	48.4	43.7			
				47.5	48.9	44.3			
				47.8	49.2	44.6			
31-Oct-23	Fine	0.2	13:50	48.4	49.8	45.1	45.8	75.0	59.6
				48.8	50.2	45.4			
				47.0	49.2	45.0			
				45.8	47.4	42.0			
				45.4	46.9	41.7			

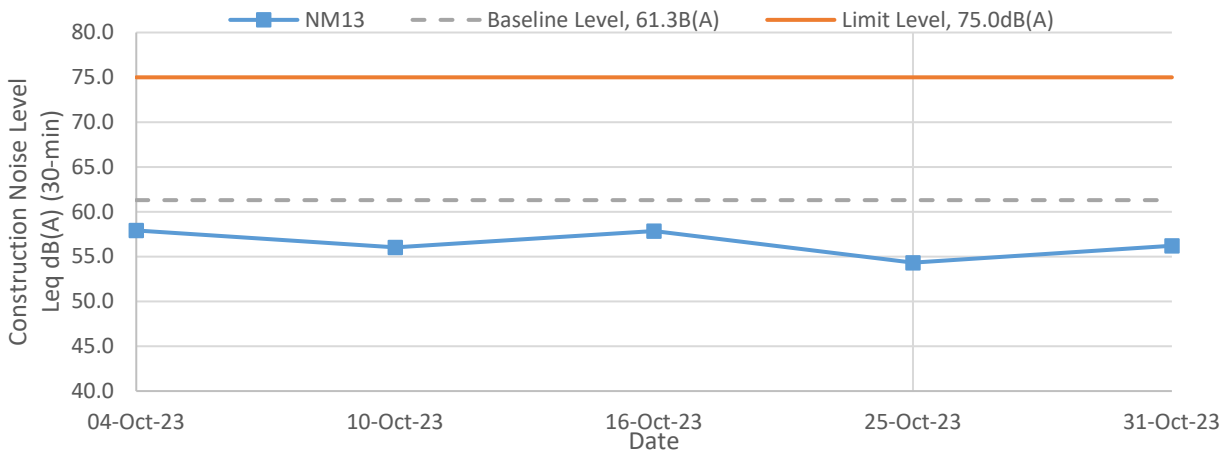
## Noise Levels



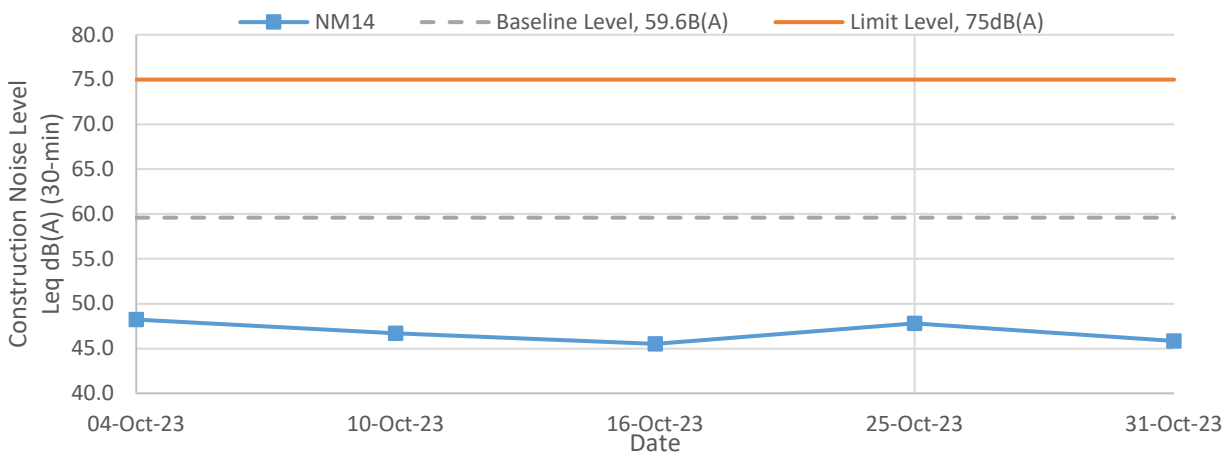
### NM12 - Village House, Kong Nga Po



### NM13 - Village House, Kong Nga Po



### NM14 - Village House, Kong Nga Po



**APPENDIX G**  
**WEATHER CONDITION**

**Appendix G –**

**General Weather Conditions during the Monitoring Period (October 2023)**

Date October	Mean Pressure (hPa)	Air Temperature			Mean Dew Point Temperature (deg. C)	Mean Relative Humidity (%)	Mean Amount of Cloud (%)	Total Rainfall (mm)
		Maximum (deg. C)	Mean (deg. C)	Minimum (deg. C)				
1	1009.8	34.0	30.0	28.0	25.4	77	68	-
2	1011.3	32.3	29.5	27.9	24.7	76	64	0.4
3	1010.6	31.4	29.3	27.7	25.1	78	61	Trace
4	1009.0	34.6	30.8	28.3	25.1	73	74	-
5	1007.3	34.1	30.5	28.5	21.4	58	82	-
6	1008.3	32.2	28.3	26.7	20.3	62	88	Trace
7	1008.1	27.2	25.1	23.5	20.2	74	88	1.9
8	1008.1	25.1	24.2	22.7	21.9	87	95	92.2
9	1013.2	25.0	24.5	23.4	23.4	94	100	369.7
10	1015.6	26.9	25.3	23.8	22.1	83	91	2.3
11	1016.9	29.2	25.6	23.7	20.7	75	83	-
12	1017.6	29.2	25.7	23.5	20.3	72	79	-
13	1015.5	30.2	26.7	24.8	20.0	67	81	-
14	1013.2	30.0	26.6	24.7	19.6	66	70	-
15	1013.3	29.9	26.9	25.1	21.4	72	86	0.1
16	1014.9	28.9	26.5	25.4	20.6	70	88	-
17	1015.4	28.2	25.8	24.5	17.7	61	88	Trace
18	1015.2	25.4	24.6	23.4	21.8	85	95	38.3
19	1014.7	26.0	25.3	24.6	23.7	91	96	27.9
20	1015.2	27.6	25.9	24.6	22.6	82	88	0.2
21	1018.4	25.4	23.3	22.0	18.8	76	88	Trace
22	1018.8	27.8	24.5	22.4	18.8	71	88	Trace
23	1017.4	29.4	26.0	23.8	21.5	77	74	Trace
24	1016.3	30.1	26.8	24.8	22.2	76	50	-

25	1015.5	29.7	26.6	25.3	22.8	80	57	-
26	1014.6	29.2	26.2	24.8	22.1	78	59	-
27	1014.0	29.6	26.6	24.9	23.0	81	74	-
28	1014.8	27.7	25.8	24.2	23.1	85	87	9.5
29	1016.1	27.1	25.3	24.1	21.3	79	84	3.5
30	1017.1	29.3	26.1	24.6	21.7	77	73	Trace
31	1018.4	28.6	25.8	24.1	19.9	70	54	-
Mean/Total	1014.0	29.1	26.4	24.8	21.7	76	79	546.0
Normal*	1014.0	28.1	25.7	23.9	20.2	73	58	120.3

\* The above information was extracted from the daily weather summary by Hong Kong Observatory.



**APPENDIX H  
ECOLOGICAL MONITORING RESULTS**

Post-transplantation monitoring records for  
transplanted flora species  
(October 2023)

Contract No.: SS K509  
Design and Construction of  
Kong Nga Po Police Training Facilities

Monitoring and Maintenance Works Report

INSPECTION DATE: 25 OCTOBER 2023

REPORT DATE: 31 OCTOBER 2023



*PREPARED BY:*  
**Lau Siu Yeung, Andy**  
(UKAA PR5206)

Version: 00

Template of Post-transplantation Monitoring Checklist  
Design and Construction of Kong Nga Po Police Training Facilities

Audit Ref. No. \_\_\_\_\_

Contract SS K509

Inspected By Lau Siu Yeung (Andy)

Inspection Date 25/10/2023

Time Period 14:00 to 17:00

**Part A Weather**

Condition  Sunny  Fine  Overcast  Drizzle  Rain  Storm  Hazy

Temperature 26.6 °C

Humidity  High (RH>90%)  Moderate (90%>RH>50%)  Low (RH<50%)

Wind  Calm  Light  Breeze  Strong

**Part B**

	N/A or not observed	Yes	No	Follow-up	N/C	Remarks
<b>1. <u>Cycadfern <i>Brainea insignis</i></u></b>						
1.1 Are the plants' health conditions satisfactory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.2 Are transplanted plants on site protected carefully?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.3 Are the temporary protective fence properly erected and maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.4 Are the plant protection zone set 1m from the plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.5 Are all grassed and planted area kept free from weeds/unwanted plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.6 Is compaction of the soil avoided for the plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.7 Are litter/ unwanted material removed within the planting area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.8 Are equipment or stockpile placed outside the protection zone?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.9 Are soil, debris or construction materials deposited around and against the trunk of a plant as this causes bark damage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.10 Are fixings driven into plants avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.11 Are the plants used for anchoring or winching purposes or for the display of signs avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.12 Are the fire lit below the branches and petrol, oil or caustic substances stored near the plants avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.13 Are all plants kept free from pest, disease or fungal infection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.14 Are there enough area for growth and development of plant roots?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.15a Is exposure of plant roots avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
1.15b If not, were broken off or rotting of roots avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

	N/A or not observed	Yes	No	Follow-up	N/C	Remarks
<b>2. <u>Ladies Tresses <i>Spiranthes sinensis</i></u></b>						
2.1 Are the plants' health conditions satisfactory?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.2 Are transplanted plants on site protected carefully?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.3 Are the temporary protective fence properly erected and maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.4 Are the plant protection zone set 1m from the plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.5 Are all grassed and planted area kept free from weeds/unwanted plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.6 Is compaction of the soil avoided for the plants?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.7 Are litter/ unwanted material removed within the planting area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Template of Post-transplantation Monitoring Checklist  
Design and Construction of Kong Nga Po Police Training Facilities

	N/A or not observed	Yes	No	Follow-up	N/C	Remarks
2.8 Are equipment or stockpile placed outside the protection zone?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.9 Are soil, debris or construction materials deposited around and against the trunk of a plant as this causes bark damage avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.10 Are fixings driven into plants avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.11 Are the plants used for anchoring or winching purposes or for the display of signs avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.12 Are the fire lit below the branches and petrol, oil or caustic substances stored near the plants avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.13 Are all plants kept free from pest, disease or fungal infection?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.14 Are there enough area for growth and development of plant roots?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.15a Is exposure of plant roots avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.15b If not, were broken off or rotting of roots avoided?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

	N/A or not observed	Yes	No	Follow-up	N/C	Remarks
<del>3. <b><u>Incense Trees <i>Aquilaria sinensis</i></u></b></del>						
<del>3.1 Are the trees's health conditions satisfactory?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.2 Are transplanted trees on site protected carefully?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.3 Are the temporary protective fence properly erected and maintained?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.4 Are the tree protection zone set 1m from the trees?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.5 Are all grassed and planted area kept free from weeds/unwanted plants?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.6 Is compaction of the soil avoided for the trees</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.7 Are litter/ unwanted material removed within the planting area?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.8 Are equipment or stockpile placed outside the protection zone?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.9 Are soil, debris or construction materials deposited around and against the trunk of a tree as this causes bark damage avoided?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.10 Are fixings driven into trees avoided?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.11 Are the trees used for anchoring or winching purposes or for the display of signs avoided?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.12 Are the fire lit below the branches and petrol, oil or caustic substances stored near the trees avoided?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.13 Are all trees kept free from pest, disease or fungal infection?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.14 Are there enough area for growth and development of tree roots?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.15a Is exposure of tree roots avoided?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.15b If not, were broken off or rotting of roots avoided?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.16 Are wounds/mechanical injuries avoided on tree trunk?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.17 Are leaning of trees avoided?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.18 Are dead/detached branches avoided?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
<del>3.19 Are decay/cavity avoided on tree trunks?</del>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

Template of Post-transplantation Monitoring Checklist  
Design and Construction of Kong Nga Po Police Training Facilities

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**Part C** Follow-up for the Previous Site Audit on Date: \_\_\_\_\_ (Ref. No. \_\_\_\_\_)

		N/A or not observed	Yes	No	Follow-up	N/C	Remarks
1.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
3.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
4.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
5.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
6.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
7.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
8.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
9.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
10.	Is the situation in item _____ improved/rectified?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

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**Remarks/Observations**

**Signatures:**

Contractor's Representative



(Name: **Lau Siu Yeung** )  
(Date: **31/10/2023** )

Supervisor's Rep.

(Name: \_\_\_\_\_ )  
(Date: \_\_\_\_\_ )



Tree/Plant/ Colony No.	Number of Individuals	Species Name	Form (Good/Fair/Poor)	Health (Good/Fair/Poor)	Remark
C-0001	01	<i>Brainea insignis</i>	F	F	Young leaves observed
	02	<i>Brainea insignis</i>	F	F	Young leaves observed
	03	<i>Brainea insignis</i>	F	F	Young leaves observed
	04	<i>Brainea insignis</i>	F	F	Young leaves observed
	05	<i>Brainea insignis</i>	F	F	Young leaves observed
	06	<i>Brainea insignis</i>	F	F	Young leaves observed
	07	<i>Brainea insignis</i>	F	F	Young leaves observed
	08	<i>Brainea insignis</i>	F	F	Young leaves observed
C-0002	01	<i>Brainea insignis</i>	F	F	Young leaves observed
	02	<i>Brainea insignis</i>	F	F	Young leaves observed
	03	<i>Brainea insignis</i>	F	P	Young leaves observed
	04	<i>Brainea insignis</i>	F	P	Young leaves observed
	05	<i>Brainea insignis</i>	F	F	Young leaves observed
	06	<i>Brainea insignis</i>	F	F	Young leaves observed
	07	<i>Brainea insignis</i>	F	F	Young leaves observed
	08	<i>Brainea insignis</i>	F	F	Young leaves observed
C-0003	01	<i>Brainea insignis</i>	F	F	Young leaves observed
C-0004	01	<i>Brainea insignis</i>	P	P	Young leaves at base; Dry out caused by bushfire initially outside site boundary and high temperature on 2 Feb 2021
	02	<i>Brainea insignis</i>	F	F	Young leaves observed
	03	<i>Brainea insignis</i>	F	F	Young leaves observed
	04	<i>Brainea insignis</i>	F	F	Young leaves observed
	05	<i>Brainea insignis</i>	F	F	Young leaves observed
	06	<i>Brainea insignis</i>	F	F	Young leaves observed
	07	<i>Brainea insignis</i>	F	F	Young leaves observed
	08	<i>Brainea insignis</i>	F	P	Young leaves at base
	09	<i>Brainea insignis</i>	P	P	Dry out caused by bushfire initially outside site boundary and high temperature on 2 Feb 2021
	10	<i>Brainea insignis</i>	F	P	Young leaves at base
	11	<i>Brainea insignis</i>	F	F	Young leaves observed
	12	<i>Brainea insignis</i>	F	P	Young leaves observed
	13	<i>Brainea insignis</i>	-	-	Stem not found Dry out caused by bushfire initially outside site boundary and high temperature on 2 Feb 2021
	14	<i>Brainea insignis</i>	F	F	Young leaves observed
	15	<i>Brainea insignis</i>	P	P	Young leaves at base; Dry out caused by bushfire initially outside site boundary and high temperature on 2 Feb 2021
	16	<i>Brainea insignis</i>	P	P	Dry out caused by bushfire initially outside site boundary and high temperature on 2 Feb 2021
	17	<i>Brainea insignis</i>	P	P	Young leaves observed
	18	<i>Brainea insignis</i>	-	-	Burned by bushfire initially outside the site boundary on 2 Feb 2021.
	19	<i>Brainea insignis</i>	F	P	-
	20	<i>Brainea insignis</i>	F	F	Young leaves observed

Tree/Plant/ Colony No.	Number of Individuals	Species Name	Form (Good/Fair/Poor)	Health (Good/Fair/Poor)	Remark
C-0005	01	<i>Brainea insignis</i>	F	F	Young leaves observed
	02	<i>Brainea insignis</i>	F	F	Young leaves observed
	03	<i>Brainea insignis</i>	F	F	Young leaves observed
	04	<i>Brainea insignis</i>	F	F	Young leaves observed
	05	<i>Brainea insignis</i>	F	P	Young leaves at base
	06	<i>Brainea insignis</i>	F	F	Young leaves observed
	07	<i>Brainea insignis</i>	F	F	Young leaves observed
C-0006	01	<i>Brainea insignis</i>	P	F	Young leaves observed
C-0007	01	<i>Brainea insignis</i>	F	F	Young leaves observed
	02	<i>Brainea insignis</i>	F	P	-
C-0008	01	<i>Brainea insignis</i>	F	F	Young leaves observed
	02	<i>Brainea insignis</i>	F	F	Young leaves observed
	03	<i>Brainea insignis</i>	P	P	Young leaves observed
	04	<i>Brainea insignis</i>	F	F	Young leaves observed
	05	<i>Brainea insignis</i>	F	F	Young leaves observed
	06	<i>Brainea insignis</i>	F	P	-
	07	<i>Brainea insignis</i>	F	P	Young leaves at base
C-0009	01	<i>Brainea insignis</i>	F	F	Young leaves observed
C-0010	01	<i>Brainea insignis</i>	F	F	Young leaves observed
	02	<i>Brainea insignis</i>	F	F	Young leaves observed
	03	<i>Brainea insignis</i>	F	F	Young leaves observed
C-0011	01	<i>Brainea insignis</i>	P	P	Dry out caused by bushfire initially outside site boundary and high temperature on 2 Feb 2021
	02	<i>Brainea insignis</i>	F	P	-
	03	<i>Brainea insignis</i>	P	P	Young leaves at base
	04	<i>Brainea insignis</i>	F	F	-
	05	<i>Brainea insignis</i>	F	P	Young leaves at base
	06	<i>Brainea insignis</i>	F	F	Young leaves at base
	07	<i>Brainea insignis</i>	P	P	Young leaves at base
	08	<i>Brainea insignis</i>	F	F	Young leaves observed
	09	<i>Brainea insignis</i>	P	P	-
	10	<i>Brainea insignis</i>	F	F	Young leaves observed
	11	<i>Brainea insignis</i>	F	F	Young leaves observed
	12	<i>Brainea insignis</i>	P	P	-
	13	<i>Brainea insignis</i>	F	F	Young leaves observed





C-001(Patch)\_01



C-001(Patch)\_02





C-0001(Patch)\_03



C-0001(Patch)\_04





C-0001(Patch)\_05



C-0001(Patch)\_06





C-0001(Patch)\_07



C-0001(Patch)\_08





C-0002(Patch)\_01



C-0002(Patch)\_02





C-0002(Patch)\_03



C-0002(Patch)\_04



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C-0002(Patch)\_05



C-0002(Patch)\_06





C-0002(Patch)\_07



C-0002(Patch)\_08





C-0003





C-0004(Patch)\_01



C-0004(Patch)\_02



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C-0004(Patch)\_03



C-0004(Patch)\_04





C-0004(Patch)\_05



C-0004(Patch)\_06





C-0004(Patch)\_07



C-0004(Patch)\_08





C-0004(Patch)\_09



C-0004(Patch)\_10





C-0004(Patch)\_11



C-0004(Patch)\_12





C-0004(Patch)\_13



C-0004(Patch)\_14





C-0004(Patch)\_15



C-0004(Patch)\_16





C-0004(Patch)\_17



C-0004(Patch)\_18





C-0004(Patch)\_19



C-0004(Patch)\_20





C-0005(Patch)\_01



C-0005(Patch)\_02





C-0005(Patch)\_03



C-0005(Patch)\_04





C-0005(Patch)\_05



C-0005(Patch)\_06





C-0005(Patch)\_07





C-0006



Contract No.: SS K509  
Design and Construction of Kong Nga Po Police Training Facilities  
Monitoring and Maintenance Works for Flora Species of Conservation Interest



C-0007(Patch)\_01



C-0007(Patch)\_02



Contract No.: SS K509  
Design and Construction of Kong Nga Po Police Training Facilities  
Monitoring and Maintenance Works for Flora Species of Conservation Interest



C-0008(Patch)\_01



C-0008(Patch)\_02





C-0008(Patch)\_03



C-0008(Patch)\_04





C-0008(Patch)\_05



C-0008(Patch)\_06





C-0008(Patch)\_07





C-0009





C-0010(Patch)\_01



C-0010(Patch)\_02





C-0010(Patch)\_03





C-0011(Patch)\_01



C-0011(Patch)\_02





C-0011(Patch)\_03



C-0011(Patch)\_04





C-0011(Patch)\_05



C-0011(Patch)\_06





C-0011(Patch)\_07



C-0011(Patch)\_08





C-0011(Patch)\_09



C-0011(Patch)\_10





C-0011(Patch)\_11



C-0011(Patch)\_12





C-0011(Patch)\_13



Contract No.: SS K509

Design and Construction of Kong Nga Po Police Training Facilities

Monitoring and Maintenance Works for Flora Species of Conservation Interest

Inspection Date: 25/10/2023

Tree/Plant/ Colony No.	Species Name	Form (Good/Fair/Poor)	Health (Good/Fair/Poor)	Remark
L-0001	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0002	<i>Spiranthes sinensis</i>	P	P	Leaf observed
L-0003	<i>Spiranthes sinensis</i>	P	P	Leaf observed
L-0004	<i>Spiranthes sinensis</i>	P	P	Leaf observed
L-0005	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0006	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0007	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0008	<i>Spiranthes sinensis</i>	P	P	Leaf observed
L-0009	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0010	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0011	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0012	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0013	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0014	<i>Spiranthes sinensis</i>	P	P	Leaf observed
L-0015	<i>Spiranthes sinensis</i>	P	P	Leaf observed
L-0016	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0018	<i>Spiranthes sinensis</i>	F	F	Leaf observed
L-0019	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0020	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0021	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0022	<i>Spiranthes sinensis</i>	F	F	Leaf observed
L-0023	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0024	<i>Spiranthes sinensis</i>	P	P	Leaf observed
L-0025	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0026	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0027	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0028	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0029	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0030	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0031	<i>Spiranthes sinensis</i>	F	F	Leaf observed
L-0032	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0033	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0034	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0035	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0036	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0037	<i>Spiranthes sinensis</i>	F	F	Leaf observed
L-0038	<i>Spiranthes sinensis</i>	P	P	Leaf observed
L-0039	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0040	<i>Spiranthes sinensis</i>	F	F	Leaf observed
L-0041	<i>Spiranthes sinensis</i>	-	-	Not observed
L-0042	<i>Spiranthes sinensis</i>	-	-	Not observed





L-0001



L-0002





L-0003



L-0004





L-0005



L-0006





L-0007



L-0008





L-0009



L-0010





L-0011



L-0012





L-0013



L-0014





L-0015



L-0016





L-0018



L-0019





L-0020



L-0021





L-0022



L-0023





L-0024



L-0025





L-0026



L-0027





L-0028



L-0029



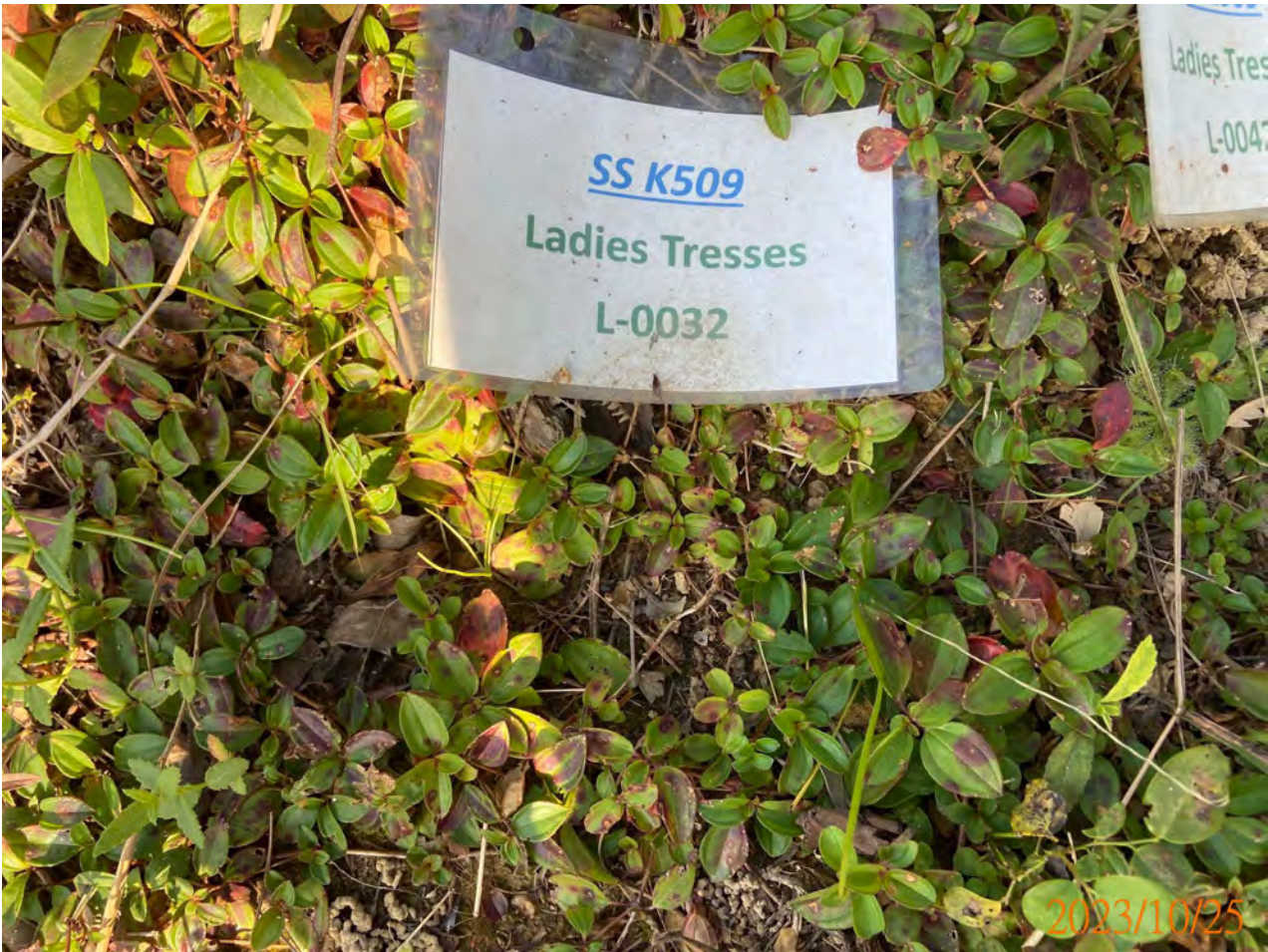


L-0030



L-0031





L-0032



L-0033





L-0034



L-0035





L-0036



L-0037





L-0038



L-0039





L-0040



L-0041





L-0042



Contract No.: SS K509

Design and Construction of Kong Nga Po Police Training Facilities

Monitoring and Maintenance Works for Flora Species of Conservation Interest

Hong Da Landscaping Limited

Vegetation Maintenance Record Sheet (October2023)

Description of Work	Date																														
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31
Watering						Y							Y												Y						
Weeding																										Y					
Fertilization																															
Pest/Disease Control																															
Firming up of fence																										Y					
Installation of shaded net																									Y						
Mulching																															
Inspection																									Y						
Checking of Protection Zone																									Y						
Remarks	MH	MH	MH	MH	MH	MH	MH, R	MH, R	MH, R	MH, R	MH	MH	MH	MH	MH	MH	MH	MH, R	MH, R	MH, R	MH	MH	MH	MH	MH	MH	MH	MH	MH	MH	MH

	Public Holiday		H-Hot	D-Drizzle		R-Rainy		W-Windy		RH-High Humidity	MH-Medium Humidity	LH-Low Humidity			
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Contract No.: SS K509  
Design and Construction of Kong Nga Po Police Training Facilities  
Monitoring and Maintenance Works for Flora Species of Conservation Interest



IMG\_2217



IMG\_2227



Post-transplantation Monitoring Checklist  
Police Facilities in Kong Nga Po

<b>Contract</b>	<b>Provision of Environmental Team consultancy for Design and Construction of Kong Nga Po Police Training Facilities (Programme no. 279LP)</b>		
<b>Inspected By</b>	<u>ETL</u>	<b>Inspection Date</b>	<u>31-10-2023</u>

**Part A Weather**

**Condition**     Sunny     Fine     Overcast     Drizzle     Rain     Storm     Hazy

**Humidity**     High (RH>90%)     Moderate (90%>RH>50%)     Low (RH<50%)

**Wind**     Calm     Light     Breeze     Strong

	N/A or not observed	Yes	No	Follow-up	N/C	Remarks
<b>Part B</b>						
<b>1. <u>Cycadfern <i>Brainea insignis</i></u></b>						
1.1 Are the plants' health conditions satisfactory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.2 Are transplanted plants on site protected carefully?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.3 Are the temporary protective fence properly erected and maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.4 Are the plant protection zone set 1m from the plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.5 Are all grassed and planted area kept free from weeds/unwanted plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.6 Is compaction of the soil avoided for the plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.7 Are litter/ unwanted material removed within the planting area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.8 Are equipment or stockpile placed outside the protection zone?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.9 Are soil, debris or construction materials deposited around and against the trunk of a plant as this causes bark damage avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.10 Are fixings driven into plants avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.11 Are the plants used for anchoring or winching purposes or for the display of signs avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.12 Are the fire lit below the branches and petrol, oil or caustic substances stored near the plants avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.13 Are all plants kept free from pest, disease or fungal infection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.14 Are there enough area for growth and development of plant roots?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15a Is exposure of plant roots avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
1.15b If not, were broken off or rotting of roots avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
<b>2. <u>Ladies Tresses <i>Spiranthes sinensis</i></u></b>						
2.1 Are the plants' health conditions satisfactory?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.2 Are transplanted plants on site protected carefully?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.3 Are the temporary protective fence properly erected and maintained?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.4 Are the plant protection zone set 1m from the plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.5 Are all grassed and planted area kept free from weeds/unwanted plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.6 Is compaction of the soil avoided for the plants?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
2.7 Are litter/ unwanted material removed within the planting area?	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	


Post-transplantation Monitoring Checklist  
Police Facilities in Kong Nga Po

	N/A or not observed	Yes	No	Follow-up	N/C	Remarks
2.8 Are equipment or stockpile placed outside the protection zone?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.9 Are soil, debris or construction materials deposited around and against the trunk of a plant as this causes bark damage avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.10 Are fixings driven into plants avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.11 Are the plants used for anchoring or winching purposes or for the display of signs avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.12 Are the fire lit below the branches and petrol, oil or caustic substances stored near the plants avoided?	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.13 Are all plants kept free from pest, disease or fungal infection?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.14 Are there enough area for growth and development of plant roots?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.15a Is exposure of plant roots avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____
2.15b If not, were broken off or rotting of roots avoided?	<input checked="" type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	_____

**Advice/observations**

1) Please refer to the guidelines on soil improvement issued by the Greening, Landscape and Tree Management Section (GLTMS) of the development bureau (2022) to apply to monitoring and maintenance of transplanted flora species.

2) The advisable installation of a shaded net is provided below.

IEC	ETL	Contractor Representative
		
Name: Mr. Law	Name: Mr. Lee	Name: Marian Kong
Date:	Date: 31-10-2023	Date:



The advisable installation of a shaded net



Remark: Non scale & Conceptual drawing

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**APPENDIX I  
EVENT ACTION PLANS**

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**Appendix I:**

**Table I-1: Event / Action Plan for Air Quality**

EVENT	ACTION			
	ET	IEC	PERMIT HOLDER	CONTRACTOR
<b>ACTION LEVEL</b>				
1. Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform IEC, ER and Contractor;</li> <li>3. Repeat measurement to confirm finding; and</li> <li>4. Increase monitoring frequency to daily.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method.</li> </ol>	<ol style="list-style-type: none"> <li>1. Notify Contractor.</li> </ol>	<ol style="list-style-type: none"> <li>1. Rectify any unacceptable practice;</li> <li>2. Amend working methods if appropriate.</li> </ol>
2. Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Identify source;</li> <li>2. Inform IEC, ER and Contractor;</li> <li>3. Advise the WKCDA on the effectiveness of the proposed remedial measure;</li> <li>4. Repeat measurements to confirm findings;</li> <li>5. Increase monitoring frequency to daily;</li> <li>6. Discuss with IEC and Contractor on remedial actions required;</li> <li>7. If exceedance continues, arrange meeting with IEC and ER; and</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ET on the effectiveness of the proposed remedial measures; and</li> <li>5. Monitor Implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor; and</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit proposals for remedial to ER within 3 working days of notification;</li> <li>2. Implement the agreed proposals; and</li> <li>3. Amend proposal if appropriate.</li> </ol>

EVENT	ACTION			
	ET	IEC	PERMIT HOLDER	CONTRACTOR
	8. If exceedance stops, cease additional monitoring.			
<b>LIMIT LEVEL</b>				
1.Exceedance for one sample	<ol style="list-style-type: none"> <li>1. Identify source, investigate the causes of exceedance and propose remedial measures;</li> <li>2. Inform ER, Contractor and EPD;</li> <li>3. Repeat measurement to confirm finding;</li> <li>4. Increase monitoring frequency to daily; and</li> <li>5. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and the ER informed of the results.</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss with ET and Contractor on possible remedial measures;</li> <li>4. Advise the ER on the effectiveness of the proposed remedial measures; and</li> <li>5. Monitor the implementation of remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor; and</li> <li>3. Ensure remedial measures properly implemented.</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals; and</li> <li>4. Amend proposal if appropriate.</li> </ol>
2.Exceedance for two or more consecutive samples	<ol style="list-style-type: none"> <li>1. Notify IEC, the ER, Contractor and EPD;</li> <li>2. Identify source;</li> <li>3. Repeat measurement to confirm findings;</li> <li>4. Increase monitoring frequency to daily;</li> <li>5. Carry out analysis of Contractor's working procedures to determine</li> </ol>	<ol style="list-style-type: none"> <li>1. Check monitoring data submitted by ET;</li> <li>2. Check Contractor's working method;</li> <li>3. Discuss amongst ER, ET, and Contractor on the potential remedial actions;</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consultation with IEC, agree with the Contractor on the remedial measures to be implemented;</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to IEC within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> </ol>



EVENT	ACTION			
	ET	IEC	PERMIT HOLDER	CONTRACTOR
	<p>possible mitigation to be implemented;</p> <p>6. Arrange meeting with IEC, and ER to discuss the remedial actions to be taken;</p> <p>7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and</p> <p>8. If exceedance stops, cease additional monitoring.</p>	<p>4. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly; and</p> <p>5. Monitor implementation of remedial measures.</p>	<p>4. Ensure remedial measures properly implemented; and</p> <p>5. If exceedance continues, consider what portion of the work is responsible and instruct the Contractor to stop that portion of work until the exceedance is abated.</p>	<p>4. Resubmit proposals if problem still not undercontrol; and</p> <p>5. Stop the relevant portion of works as determined by the ER until the exceedance is abated.</p>

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker

**Table I-2: Event / Action Plan for Construction Noise**

EVENT	ACTION			
	ET	IEC	PERMIT HOLDER	CONTRACTOR
Action Level	<ol style="list-style-type: none"> <li>1. Notify ER, IEC and Contractor;</li> <li>2. Carry out investigation;</li> <li>3. Report the results of investigation to the IEC, ER and Contractor;</li> <li>4. Discuss with the IEC and Contractor on remedial measures required; and</li> <li>5. Increase monitoring frequency to check mitigation effectiveness.</li> </ol>	<ol style="list-style-type: none"> <li>1. Review the monitoring data submitted by the ET;</li> <li>2. Review the proposed remedial measures by the Contractor and advise ER; and</li> <li>3. Advise the ER on the effectiveness of the proposed remedial measures.</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measure to be implemented: and</li> <li>4. Supervise the implementation of remedial measure.</li> </ol>	<ol style="list-style-type: none"> <li>1. Submit noise mitigation proposals to IEC and ER; and</li> <li>2. Implement noise mitigation proposals.</li> </ol>
Limit Level	<ol style="list-style-type: none"> <li>1. Inform IEC, ER and Contractor and EPD;</li> <li>2. Repeat measurements to confirm findings;</li> <li>3. Increase the monitoring frequency;</li> <li>4. Identify source and investigate the cause of exceedance;</li> <li>5. Carry out analysis of Contractor's working procedures;</li> <li>6. Discuss with the IEC, Contractor and ER on</li> </ol>	<ol style="list-style-type: none"> <li>1. Discuss amongst the ER, ET, and Contractor on the potential remedial actions; and</li> <li>2. Review Contractor's remedial actions whenever necessary to assure their effectiveness and advise the ER accordingly;</li> </ol>	<ol style="list-style-type: none"> <li>1. Confirm receipt of notification of failure in writing;</li> <li>2. Notify the Contractor;</li> <li>3. In consolidation with the IEC, agree with the Contractor on the remedial measures to be implemented;</li> <li>4. Supervise the implementation of remedial measures; and</li> <li>5. If exceedance continues, consider</li> </ol>	<ol style="list-style-type: none"> <li>1. Take immediate action to avoid further exceedance;</li> <li>2. Submit proposals for remedial actions to the IEC and ER within 3 working days of notification;</li> <li>3. Implement the agreed proposals;</li> <li>4. Submit further proposal if problem still not under control; and</li> <li>5. Stop the relevant portion of works as</li> </ol>



EVENT	ACTION			
	ET	IEC	PERMIT HOLDER	CONTRACTOR
	remedial measure required; 7. Assess effectiveness of Contractor's remedial actions and keep IEC, EPD and ER informed of the results; and 8. If exceedance stops, cease additional monitoring.		stopping the Contractor to continue working in that portion of work which causes the exceedance until the exceedance is abated.	determined by the ER until the exceedance is abated.

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker

**Table I-3: Event / Action Plan for Landscape and Visual Mitigation Measures**

EVENT	ACTION			
	ET	IEC	PERMIT HOLDER	CONTRACTOR
Non-conformity on one occasion	Identify source. Inform IEC and ER. Discuss remedial actions with IEC, ER and Contractor. Monitor remedial actions until rectification has been completed.	Check report. Check Contractor's working method. Discuss with ET and Contractor on possible remedial measures. Advise ER on effectiveness of proposed remedial measures. Check implementation of remedial measures.	Notify Contractor. Ensure remedial measures are properly implemented	Amend working methods to prevent recurrence of nonconformity. Rectify damage and undertake additional action necessary.
Repeated Nonconformity	Identify source. Inform IEC and ER. Increase monitoring frequency. Discuss remedial actions with IEC, ER and Contractor. Monitor remedial actions until rectification has been completed. If non-conformity stops, cease additional monitoring.	Check monitoring report. Check Contractor's working method. Discuss with ET and Contractor on possible remedial measures. Advise ER on effectiveness of proposed remedial measures. Supervise implementation of remedial measures.	Notify Contractor. Ensure remedial measures are properly implemented.	Amend working methods to prevent recurrence of nonconformity. Rectify damage and undertake additional action necessary.

Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker



**APPENDIX J**  
**SUMMARY OF EXCEEDANCE**

**Appendix J: Exceedance Report**

**(A) Exceedance Report for Air Quality**

Environmental Monitoring	Parameter	No. of non-project related Exceedance		No. of Exceedance related to the Construction Activities of this Contract		Cumulative No. of Exceedance recorded
		Action Level	Limit Level	Action Level	Limit Level	
Air Quality	1-hr TSP	0	0	0	0	0

**(B) Exceedance Report for Construction Noise**

Environmental Monitoring	Parameter	No. of non-project related Exceedance		No. of Exceedance related to the Construction Activities of this Contract		Cumulative No. of Exceedance recorded
		Action Level	Limit Level	Action Level	Limit Level	
Noise	Leq(30 min.) dB(A)	0	0	0	0	0



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**APPENDIX K  
ENVIRONMENTAL MITIGATION  
IMPLEMENTATION SCHEDULE (EMIS)**

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EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
<b>Air Quality Impact – Construction Phase</b>									
3.9.1	2.2	<p><b>Dust Control Measures</b></p> <p>To achieve compliance with the FSP, RSP and TSP criteria during the construction phase, good practices for dust control should be implemented to reduce dust impacts. The dust control measures are detailed as follows:</p> <ul style="list-style-type: none"> <li>▪ Use of regular water spraying (once every 1.25 hours or 8 times per day) to reduce dust emissions from heavy construction activities (including ground excavation, earth moving, etc.) at all active works area exposed site surfaces and unpaved roads, particularly during dry weather.</li> <li>▪ Covering 80% of stockpiling area by impervious sheets and spraying all dusty material with water immediately prior to any loading transfer operations to keep the dusty materials wet during material handling at the stockpile areas</li> </ul> <p>Relevant dust control practices as stipulated in the Air Pollution Control (Construction Dust) Regulation should be adopted:</p> <p>Good Site Management</p> <ul style="list-style-type: none"> <li>▪ Good site management is important to help reduce potential air quality impact down to an acceptable level. As a general guide, the</li> </ul>	Construction Dust	Contractor	Project construction site / Duration of the construction phase / Prior to commencement of operation		✓		EIA Recommendation and Air Pollution Control (Construction Dust) Regulation



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		<p>Contractor should maintain high standards of housekeeping to prevent emissions of fugitive dust. Loading, unloading, handling and storage of raw materials, wastes or by-products should be carried out in a manner so as to minimise the release of visible dust emission. Any piles of materials accumulated on or around the work areas should be cleaned up regularly. Cleaning, repair and maintenance of all plant facilities within the work areas should be carried out in a manner minimising generation of fugitive dust emissions. The material should be handled properly to prevent fugitive dust emission before cleaning.</p> <p><b>Disturbed Parts of the Roads</b></p> <ul style="list-style-type: none"> <li>▪ Main temporary access points should be paved with concrete, bituminous hardcore materials or metal plates and be kept clear of dusty materials; or</li> <li>▪ Unpaved parts of the road should be sprayed with water or a dust suppression chemical so as to keep the entire road surface wet.</li> </ul> <p><b>Exposed Earth</b></p> <ul style="list-style-type: none"> <li>▪ Exposed earth should be properly treated by compaction, hydroseeding, vegetation planting or seeding with latex, vinyl, bitumen within six months after the last construction activity on the site or part of the site where the exposed earth lies.</li> </ul> <p><b>Loading, Unloading or Transfer of Dusty Materials</b></p> <ul style="list-style-type: none"> <li>▪ All dusty materials should be sprayed with water immediately prior to any loading or transfer operation so as to keep the dusty material wet.</li> </ul>							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		<p>Debris Handling</p> <ul style="list-style-type: none"> <li>▪ Any debris should be covered entirely by impervious sheeting or stored in a debris collection area sheltered on the top and the three sides.</li> <li>▪ Before debris is dumped into a chute, water should be sprayed onto the debris so that it remains wet when it is dumped.</li> </ul> <p>Transport of Dusty Materials</p> <ul style="list-style-type: none"> <li>▪ Vehicles used for transporting dusty materials/spoils should be covered with tarpaulin or similar material. The cover should extend over the edges of the sides and tailboards.</li> </ul> <p>Wheel washing</p> <ul style="list-style-type: none"> <li>▪ Vehicle wheel washing facilities should be provided at each construction site exit. Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels.</li> </ul> <p>Use of vehicles</p> <ul style="list-style-type: none"> <li>▪ The speed of the trucks within the site should be controlled to about 10 km/hour in order to reduce adverse dust impacts and secure the safe movement around the site.</li> <li>▪ Immediately before leaving the construction site, every vehicle should be washed to remove any dusty materials from its body and wheels.</li> <li>▪ Where a vehicle leaving the construction site is carrying a load of dusty materials, the load should be covered entirely by clean impervious sheeting to ensure that the dusty materials do not leak from the vehicle.</li> </ul>							



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		<p>Site hoarding</p> <ul style="list-style-type: none"> <li>Where a site boundary adjoins a road, street, service lane or other area accessible to the public, hoarding of not less than 2.4m high from ground level should be provided along the entire length of that portion of the site boundary except for a site entrance or exit</li> </ul>							
<b>Air Quality Impact – Operation Phase</b>									
3.7.4	-	<p><b>Control Measures of proposed firing ranges</b></p> <ul style="list-style-type: none"> <li>Bullet containment systems such as backstops of soft materials (e.g. timber baffles) and sand traps behind bullet targets are proposed to be installed to collect bullets from gunshots, which would reduce lead dust and dust in general.</li> <li>Monitoring and adjusting of soil pH or runoff control measures may be required to ensure no lead migration occurs. Alternatively, the use of lead-free primers mixture for firearms or air pistols would eradicate lead dust emissions completely.</li> <li>A solid fence wall (at least 2.4m to 3.5m high) with a backstop of soft material (of a density of at least 20kg/m<sup>2</sup>) will also be erected around the boundary of the firing ranges.</li> </ul>	Proposed Firing Range	Hong Kong Police Force	Duration of the operation phase			✓	N/A
<b>Noise Impact – Construction Phase</b>									
4.4.6	3.2	<p><b>Good Site Practice</b></p> <p>Good site practice and noise management can significantly reduce the impact of construction site activities on nearby NSRs. The following package of measures should be followed during each phase of construction:</p> <ul style="list-style-type: none"> <li>only well-maintained plant to be operated on-site and plant should be serviced regularly during the construction works;</li> <li>machines and plant that may be in intermittent use to be shut down between work periods or should be throttled down to a minimum;</li> </ul>	Maintain good site practice to minimise / avoid construction noise impact	Contractor	Within the Project site / During construction phase / Prior to commencement of operation.		✓		EIAO and Noise Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		<ul style="list-style-type: none"> <li>▪ plant known to emit noise strongly in one direction, should, where possible, be orientated to direct noise away from the NSRs;</li> <li>▪ mobile plant should be sited as far away from NSRs as possible; and</li> <li>▪ material stockpiles and other structures to be effectively utilised, where practicable, to screen noise from on-site construction activities.</li> </ul>							
4.4.6	3.2	<b>Adoption of QPME</b> QPME should be adopted as far as applicable.	Minimise / avoid construction noise impacts to the surrounding NSRs	Contractor	Within the Project site / During construction phase / Prior to commencement of operation.		✓		EIAO and Noise Control Ordinance
4.4.6	3.2	<b>Use of Movable Noise Barriers</b> Movable noise barriers should be placed along the active works area and mobile plants to block the direct line of sight between PME and the NSRs.	Minimise / avoid construction noise impacts to the surrounding NSRs	Contractor	Within the Project site / During construction phase / Prior to commencement of operation.		✓		EIAO and Noise Control Ordinance
4.4.6	3.2	<b>Use of Noise Enclosure/ Acoustic Shed</b> Noise enclosure or acoustic shed should be used to cover stationary PME such as air compressor and generator.	Minimise / avoid construction noise impacts to the surrounding NSRs	Contractor	Within the Project site / During construction phase / Prior to commencement of operation.		✓		EIAO and Noise Control Ordinance
4.4.6	3.2	<b>Use of Noise Insulating Fabric</b> Noise insulating fabric can also be adopted for certain PME (e.g. pilling machine etc.).	Minimise / avoid construction noise impacts to the surrounding NSRs	Contractor	Within the Project site / During construction phase / Prior to commencement of operation.		✓		EIAO and Noise Control Ordinance
<b>Noise Impact – Operation Phase</b>									
4.6.6	3.3	<b>Fixed Noise Source</b> At least 2.5m height perimeter wall / boundary wall at the Project site and 5m height 4-side walls at Ma Tso Lung Firing Range will be installed.	Minimise / avoid fixed noise source impacts to the surrounding NSRs	Design Architect / Contractor	Within the Project site / During construction phase / Prior to commencement of operation.		✓		EIAO and Noise Control Ordinance
4.6.6	3.3	<b>Fixed Noise Source</b> Specification of the maximum allowable sound	Minimise / avoid fixed noise source impacts to	Design Architect / Contractor	Within the Project site / During operation phase			✓	EIAO and Noise Control



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		<p>power levels of the proposed fixed plants should be followed.</p> <p>The following noise reduction measures should be considered as far as practicable during operation:</p> <ul style="list-style-type: none"> <li>▪ Install sand bullet trap, sound absorption materials and baffle system at the planned firing ranges;</li> <li>▪ Choose quieter plant such as those which have been effectively silenced;</li> <li>▪ Include noise levels specification when ordering new plant (including chillier and E/M equipment);</li> <li>▪ Locate fixed plant/louvre away from any NSRs as far as practicable;</li> <li>▪ Locate fixed plant in walled plant rooms or in specially designed enclosures;</li> <li>▪ Locate noisy machines in a completely separate building;</li> <li>▪ Install direct noise mitigation measures including silencers, acoustic louvres and acoustic enclosure where necessary; and</li> <li>▪ Develop and implement a regularly scheduled plant maintenance programme so that equipment is properly operated and serviced in order to maintain a controlled level of noise.</li> </ul>	the surrounding NSRs		/ Throughout operation phase				Ordinance
4.7.4	3.3	<p><b>Helicopter Noise</b></p> <p>At least 2.5m height perimeter wall / boundary wall at the Project site will be installed.</p>	Minimise / avoid helicopter noise impacts to the surrounding NSRs	Design Architect / Contractor	Within the Project site / During construction phase / Prior to commencement of operation.		✓		EIAO and Noise Control Ordinance
4.7.4	3.3	<p><b>Helicopter Noise</b></p> <p>Only one helicopter will be allowed in hovering, approaching or taking-off while another helicopter should be idling on ground.</p>	Minimise / avoid helicopter noise impacts to the surrounding NSRs	GFS	Helipad operation/ Operation Period			✓	EIAO and Noise Control Ordinance
4.7.4	3.3	<p><b>Helicopter Noise</b></p> <p>The helicopter will be in approaching or taking-off within the restricted ranges of approach/take-off flight paths and adopting steeper approach / departure (take-off) angles.</p>	Minimise / avoid helicopter noise impacts to the surrounding NSRs	GFS	Helipad operation/ Operation Period			✓	EIAO and Noise Control Ordinance

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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<b>Water Quality Impact – Construction Phase</b>									
5.6.1.1	4.2	<p><b>General Construction Activities</b></p> <p>The following measures should be implemented:</p> <ul style="list-style-type: none"> <li>Construction waste, debris and refuse generated on-site should be stored or contained appropriately to prevent them entering nearby watercourses or blocking stormwater drains.</li> <li>Regular off-site removal of these materials should be maintained to minimise the volume of waste present on the construction site at any one time.</li> <li>Stockpiles of construction materials such as cement and excavated material should be covered when not in use to reduce the potential for water pollution.</li> </ul>	Maintain good site practices to avoid pollution of water courses	Contractor	Within the Project site / During construction phase		✓		Water Pollution Control Ordinance (Cap. 358), ProPECC Note PN 1/94
5.6.1.2	4.2	<p><b>Construction Site Runoff</b></p> <p>The site practices outlined in ProPECC Note PN 1/94 should be followed as far as practicable in order to minimise surface runoff and the chance of erosion. The following measures are recommended:</p> <ul style="list-style-type: none"> <li>Temporary site drainage facilities are to be designed and implemented by the Contractor prior to commencement of construction to convey surface runoff to storm drains applying adequately designed silt/ sand removal traps and sediment basins.</li> <li>Perimeter cut-off drains shall be installed in advance of any earthworks and site formation work to convey site runoff from the works areas to the silt removal facilities.</li> <li>Runoff into the excavation areas during rainstorm events shall be minimised as far as practicable. Any wastewater pumped out of the excavation areas shall be treated to remove suspended solids prior to discharge.</li> <li>Maintenance and inspection of the drainage system and sediment removal facilities should</li> </ul>	Minimise / control construction site runoff to avoid pollution of water courses	Contractor	Within the Project site / During construction phase		✓		Water Pollution Control Ordinance (Cap. 358), ProPECC Note PN 1/94



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		<p>be carried out regularly to remove any sediment and blockages, especially when rainstorms are forecast.</p> <ul style="list-style-type: none"> <li>▪ Final surface levels should be compacted and final surface protections installed to prevent erosion caused by rainstorms.</li> <li>▪ Open stockpiles of material should be covered on site with waterproof layers such as tarpaulin to reduce the potential for sediment laden runoff entering the drainage system.</li> <li>▪ The wheels of all vehicles and plant should be cleaned before leaving the works areas to remove sediment, soil and debris from the tracks. The washwater should be treated to remove any suspended sediment.</li> <li>▪ Surface water from concrete batching areas and the rest of the site should be separated as far as possible. Wastewater from any concrete batching plant (if required) shall be treated to the required standards including pH adjustment and settlement of suspended sediments before discharging to stormwater drains.</li> <li>▪ Manholes (including those constructed as part of the Project) should be adequately covered and temporarily sealed at all times to prevent silt, construction materials or debris from entering the drainage system, and to prevent storm runoff from entering foul sewers. The discharge of surface runoff into foul sewers should be prevented so as not to overload the sewerage system.</li> </ul> <p>Discharges should be collected by the temporary drainage system installed by the Contractor and treated on-site to remove sediment prior to discharge to the off-site drainage areas. The Contractor is required to obtain a discharge licence from EPD under the WPCO for all discharges from site with all discharges meeting the water quality requirements of the Technical</p>							

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		Memorandum on Standards for Effluents Discharged into Drainage and Sewerage Systems, Inland and Coastal Waters (TM-DSS).							
5.6.1.3	4.2	<p><b>Accidental Spillage of Chemicals</b></p> <p>In accordance with the Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C), the following measures should be implemented:</p> <ul style="list-style-type: none"> <li>▪ The labelling and storage of chemicals should be in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes and maintained at all times by the Contractor.</li> <li>▪ Oils and fuels should only be stored in designated areas which have appropriate pollution prevention control facilities such as oil and grease traps.</li> <li>▪ The maintenance of vehicles should only be undertaken in areas of the site served by appropriate pollution prevention control facilities.</li> <li>▪ To prevent the spillage of fuels and solvents to nearby stormwater drains, all fuel tanks and storage areas should be locked and sited on sealed areas of the site, within bunded areas with a capacity equal to 110% of the storage capacity of the largest container. The bund should be kept free of surface water at all times and after each rainfall event.</li> </ul>	Prevent accidental discharge of chemicals into the surrounding environment	Contractor	Within the Project site / During construction phase		✓		Code of Practice on the Packaging Labelling and Storage of Chemical Wastes; Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)
5.6.1.4	4.2	<p><b>Sewage from Construction Workforce</b></p> <p>Portable toilets should be available throughout the construction phase and regularly maintained, collected and disposed by a licensed waste collector to a public sewage treatment works for suitable treatment.</p>	Prevent discharge of sewage into the surrounding environment	Contractor	Within the Project site / During construction phase		✓		Water Pollution Control Ordinance (Cap. 358), ProPECC Note PN 1/94
5.6.1.5	4.2	<p><b>Construction Works in Close Proximity to Inland Watercourses</b></p> <p>Mitigation measures such as such as temporary diversions of existing drainage culverts/ watercourses before construction commences and</p>	Minimise/ control construction site discharges to avoid pollution of nearby watercourses	Contractor	Within the Project site / During construction phase		✓		Water Pollution Control Ordinance (Cap. 358), ProPECC Note PN 1/94,



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		<p>during construction should be implemented, in addition to those listed in ProPECC Note PN1/94 <i>Construction Site Drainage</i> and ETWB TC (Works) No. 5/2005 <i>Protection of Natural Streams/ rivers from Adverse Impacts Arising from Construction Works</i>. Measures include the following:</p> <ul style="list-style-type: none"> <li>▪ Stockpiling of construction materials and spoil, should be properly covered and located away from any natural stream/river.</li> <li>▪ Construction works close to the inland waters should be carried out in dry season as far as practicable where the flow in the surface channel or stream is low.</li> <li>▪ Removal of existing vegetation alongside the riverbanks should be avoided or minimised. When disturbance to vegetation is unavoidable, all disturbed areas should be hydroseeded or planted with suitable vegetation to blend in with the natural environment upon completion of works.</li> </ul>							ETWB TC (Works) No. 5/2005
<b>Water Quality Impact – Operation Phase</b>									
5.6.2.1	4.2	<p><b>Stormwater Runoff</b></p> <p>In accordance with Drainage Services Department's Stormwater Drainage Manual, the following measures should be implemented:</p> <ul style="list-style-type: none"> <li>▪ Silt removal facilities should be implemented to reduce the potential for suspended solids and heavy metal contaminants from vehicles.</li> <li>▪ Petrol interceptors should be installed in areas with the potential to generate runoff contaminated with petrol and grease to capture pollutants from vehicles and their maintenance, especially in 'first flush' rainfall events.</li> <li>▪ Regular maintenance of these facilities particularly at the onset of and after each major rainstorm event will ensure the impacts on downstream river water quality are</li> </ul>	Prevent pollution of water courses due to stormwater runoff	Design Consultant/ Future site operator	During design and operation phase	✓		✓	Water Pollution Control Ordinance (Cap. 358), Stormwater Drainage Manual

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		minimised.							
5.6.2.2	4.2	<p><b>Accidental Spillage of Chemicals, Oils and Fuels</b></p> <p>In accordance with the Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C), the following measures should be implemented:</p> <ul style="list-style-type: none"> <li>▪ The labelling and storage of chemicals should be in accordance with the Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes maintained at all times.</li> <li>▪ Oils and fuels should only be stored in designated areas which have appropriate pollution prevention control facilities such as oil and grease traps.</li> <li>▪ The maintenance of vehicles should only be undertaken in areas of the site served by appropriate pollution prevention control facilities.</li> <li>▪ To prevent the spillage of fuels and solvents to nearby stormwater drains, all fuel tanks and storage areas should be locked and sited on sealed areas of the site, within bunded areas with a capacity equal to 110% of the storage capacity of the largest container. The bund should be kept free of surface water at all times and after each rainfall event.</li> </ul> <p>For refuelling activities, the following measures should be implemented:</p> <ul style="list-style-type: none"> <li>▪ Refuelling activities at the PD&amp;TTF shall be located in covered areas.</li> <li>▪ No stormwater drainage systems shall be installed in the vicinity of helicopter or vehicle refuelling facilities unless petrol interceptors are implemented with an associated connection to the foul sewerage system.</li> <li>▪ A fuel spill kit shall be located at easily accessible locations to enable any spillages to be cleaned up immediately.</li> </ul>	Prevent accidental discharge of chemicals, oils and fuels into the surrounding environment	Design Consultant/ Future site operator	During design and operation phase	✓		✓	Code of Practice on the Packaging Labelling and Storage of Chemical Wastes; Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C); Water Pollution Control Ordinance (Cap. 358); TM-DSS



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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5.6.2.3	4.2	<b>Runoff generated by the PD&amp;TTF</b> Silt traps and petrol interceptors shall be installed in the drainage system where necessary to minimise the risk of suspended sediment, heavy metals and fuel oil entering downstream watercourses.	Prevent pollution of watercourses	Design Consultant/ Future site operator	During design and operation phase	✓		✓	Water Pollution Control Ordinance (Cap. 358); TM-DSS; Stormwater Drainage Manual
<b>Sewerage and Sewage Treatment Implications – Construction Phase</b>									
N/A									
<b>Sewerage and Sewage Treatment Implications – Design and Operation Phase</b>									
5.6.2.4 / 6.7	-	Liaison with interfacing projects including OWTF2, CE1/2015(DS) and SWHSTW Phase 1A to ensure the communal / public sewerage network and the SWHSTW has adequate capacity to handle the sewage flows generated by the Project.	Ensure adequate capacity of the existing / planned sewerage network	Design Consultant/ CEDD/ EPD/ DSD	During design and operation phase	✓		✓	EIA Recommendation
5.6.2.5 / 6.7	-	To minimise the risk of overflows and emergency discharge of untreated effluents from the on-site SPS of the Project, the following mitigation measures will be implemented: <ul style="list-style-type: none"> <li>▪ The on-site SPS will be equipped with three pumps; 2 duty and 1 standby; and</li> <li>▪ Retention tank with the capacity to store 2 hours of peak sewage flows.</li> </ul>	To minimise the risk of overflows and emergency discharge of untreated effluents from the on-site SPS	Design Consultant/ CEDD	During design and operation phase	✓		✓	EIA Recommendation
6.7	-	Design of twin rising mains connecting to the communal sewer to enable maintenance works to be carried out on one pipeline while the other remains in operation.	Improve the resilience and operability of the sewer pipeline / enable maintenance without disrupting operation	Design Consultant/ CEDD	During design and operation phase	✓		✓	EIA Recommendation
<b>Waste Management Implications – Construction Phase</b>									
7.5.1.1	6.2	<b>Good Site Practice</b> Recommendations for good site practices during the construction activities include: <ul style="list-style-type: none"> <li>▪ Nomination of an approved person, such as a site manager, to be responsible for good site practices, arrangements for collection and effective disposal to an appropriate facility, of all wastes generated at the site</li> </ul>	Implement good site practices to minimise waste generation	Contractor	Project construction site / Throughout construction stage / Until completion of all construction activities		✓		Waste Disposal Ordinance (Cap 354); Waste Disposal (Chemical Wastes) (General) Regulation (Cap

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		<ul style="list-style-type: none"> <li>▪ Training of site personnel in proper waste management and chemical handling procedures</li> <li>▪ Provision of sufficient waste disposal points and regular collection of waste</li> <li>▪ Appropriate measures to minimise windblown litter and dust/odour during transportation of waste by either covering trucks or by transporting wastes in enclosed containers</li> <li>▪ Stockpiles of C&amp;D materials should be kept covered by impervious sheets to avoid wind-blown dust.</li> <li>▪ All dusty materials including C&amp;D materials should be sprayed with water immediately prior to any loading transfer operation so as to keep the dusty material wet during material handling at the stockpile areas</li> <li>▪ Provision of wheel washing facilities before the trucks leaving the works area so as to minimise dust introduction to public roads</li> <li>▪ Well planned delivery programme for off-site disposal such that adverse environmental impact from transporting the inert or non-inert C&amp;D materials is not anticipated</li> </ul>							354C); and ETWB Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site
7.5.1.2	6.2	<p><b>Waste Reduction Measures</b></p> <p>Good management and control can prevent the generation of a significant amount of waste. Waste reduction is best achieved at the planning and design stage, as well as by ensuring the implementation of good site practices. Recommendations to achieve waste reduction include:</p> <ul style="list-style-type: none"> <li>▪ Sort non-inert C&amp;D materials to recover any recyclable portions</li> <li>▪ Segregation and storage of different types of waste in different containers or skips or stockpiles to enhance reuse or recycling of materials and their proper disposal</li> <li>▪ Encourage collection of recyclable waste such as waste paper and aluminium</li> </ul>	Implement good management and control to minimise waste generation	Contractor	Project construction site / Throughout construction stage / Until completion of all construction activities		✓		Waste Disposal Ordinance (Cap 354)



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		<p>cans by providing separate labelled bins to enable such waste to be segregated from other general refuse generated by the work force</p> <ul style="list-style-type: none"> <li>▪ Proper site practices to minimise the potential for damage or contamination of inert C&amp;D materials</li> <li>▪ Plan the use of construction materials carefully to minimise amount of waste generated and avoid unnecessary generation of waste</li> </ul>							
7.5.1.3	6.2	<p><b>Inert and Non-inert C&amp;D Materials</b></p> <p>In order to minimise impacts resulting from collection and transportation of inert C&amp;D materials for off-site disposal, the inert C&amp;D materials should be reused on-site as fill material as far as practicable. In addition, inert C&amp;D materials generated from excavation works could be reused as fill materials in local projects that require public fill for reclamation.</p> <p>The surplus inert C&amp;D materials will be disposed of at the Government's PFRFs for beneficial use by other projects in Hong Kong.</p> <p>The C&amp;D materials generated from general site clearance should be sorted on site to segregate any inert materials for reuse or disposal at PFRFs whereas the non-inert materials will be disposed of at the designated landfill site.</p> <p>In order to monitor the disposal of inert and non-inert C&amp;D materials at respectively PFRFs and the designated landfill site, and to control fly-tipping, it is recommended that the Contractor should follow the DEVB Technical Circular (Works) No. 6/2010 for Trip Ticket System for Disposal of Construction &amp; Demolition Materials issued by Development Bureau. In addition, it is also recommended that the Contractor should prepare and implement a Waste Management Plan detailing their various waste arising and waste management practices in</p>	Minimise impacts resulting from collection and transportation of inert C&D materials	Contractor	Project construction site / Throughout construction stage / Until completion of all construction activities		✓		Waste Disposal Ordinance (Cap 354); DEVB Technical Circular (Works) No.6/2010 for Trip Ticket System for Disposal of Construction & Demolition Materials; and ETWB Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		accordance with the relevant requirements of the ETWB Technical Circular (Works) No. 19/2005 Environmental Management on Construction Site							
7.5.1.4	6.2	<p><b>Chemical Waste</b></p> <p>If chemical wastes are produced at the construction site, the Contractor will be required to register with the EPD as a chemical waste producer and to follow the guidelines stated in the "Code of Practice on the Packaging Labelling and Storage of Chemical Wastes". Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidising, irritant, toxic, harmful, corrosive, etc. The Contractor should use a licensed collector to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation.</p> <p>Potential environmental impacts arising from the handling activities (including storage, collection, transportation and disposal of chemical waste) are expected to be minimal with the implementation of appropriate mitigation measures as recommended</p>	Implement good practices to avoid chemical waste impact.	Contractor	Project construction site / Throughout construction stage / Until completion of all construction activities		✓		Code of Practice on the Packaging Labelling and Storage of Chemical Wastes; Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)
7.5.1.5	6.2	<p><b>General Refuse</b></p> <p>General refuse should be stored in enclosed bins or compaction units separated from inert C&amp;D materials. A reputable waste collector should be employed by the Contractor to remove general refuse from the site, separately from inert C&amp;D materials. Preferably an enclosed and covered area should be provided to reduce the occurrence of 'wind blown' light material.</p>	Implement good practices to avoid odour nuisance or pest/vermin problem and waste impact.	Contractor	Project construction site / Throughout construction stage / Until completion of all construction activities		✓		Waste Disposal Ordinance (Cap 354); Public Health and Municipal Services Ordinance (Cap 132) - Public Cleansing and Prevention of Nuisances



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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									Regulation
<b>Waste Management Implications – Operation Phase</b>									
7.5.2.1	6.3	<p><b>General Reuse</b></p> <p>General refuse should be collected on a daily basis and delivered to the refuse collection point accordingly. A reputable waste collector should be employed to remove general refuse regularly to avoid odour nuisance or pest/vermin problem. Sufficient recycling containers are recommended to be provided at suitable locations of the Project to encourage recycling of waste such as aluminium cans, plastics and waste paper.</p>	Implement good practices to avoid odour nuisance or pest/vermin problem and waste impact.	Future user	Project area / On a regular basis / Throughout operation stage			✓	Waste Disposal Ordinance (Cap 354)
7.5.2.2	6.3	<p><b>Chemical Waste</b></p> <p>If chemical wastes are expected to be produced during the operation phase, the Project Proponent should register with the EPD as a chemical waste producer and follow the guidelines stated in the "Code of Practice on the Packaging, Labelling and Storage of Chemical Wastes". Good quality containers compatible with the chemical wastes should be used, and incompatible chemicals should be stored separately. Appropriate labels should be securely attached on each chemical waste container indicating the corresponding chemical characteristics of the chemical waste, such as explosive, flammable, oxidising, irritant, toxic, harmful, corrosive, etc. Licensed collector should be deployed to transport and dispose of the chemical wastes at the approved Chemical Waste Treatment Centre or other licensed recycling facilities, in accordance with the Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C).</p>	Implement good practices to avoid chemical waste impact.	Future user	Project area / On a regular basis / Throughout operation stage			✓	Code of Practice on the Packaging Labelling and Storage of Chemical Wastes; Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)
7.5.2.3	6.3	<p><b>Cartridge Casings</b></p> <p>All cartridge casings and bullet heads should be collected from the firing range daily and kept in the storeroom for disposal. A designated waste contractor should be employed to remove</p>	Minimise impacts resulting from collection and transportation of cartridge casings and bullet heads	Future user	Project area / On a regular basis / Throughout operation stage			✓	Waste Disposal Ordinance (Cap 354)

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
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		cartridge casings and bullet heads regularly.							
<b>Land Contamination – Construction Phase</b>									
8.6.1	7.2	In any case where contaminated soil is identified after the commencement of works, a Contamination Assessment Plan (CAP) is required to be prepared for EPD's endorsement prior to the site investigation. The Contamination Assessment Report (CAR) and/ or Remediation Action Plan (RAP) should be prepared for EPD's approval after the site investigation. If land contamination is confirmed, remediation works should be carried out according to the approved RAP. A Remediation Report (RR) should also be prepared for EPD's endorsement to demonstrate that the clean-up of the contaminated land is completed. No construction work or development of the site should be carried out before the approval of the RR.	Assessment is required for EPD approval in any case where contaminated soil is identified	Contractor	Project construction site / Before construction stage	✓			Guidance Note for Contaminated Land Assessment and Remediation; Guidance Manual for Use of Risk-based Remediation Goals for Contaminated Land Management; Practice Guide for Investigation and Remediation of Contaminated Land
8.6.1	7.2	The following mitigation measures are proposed for contaminated material excavation and transportation of contaminated materials (if any), in order to minimise the potentially adverse effects on the health and safety of construction workers and impacts arising from the disposal of potentially contaminated materials: <ul style="list-style-type: none"> <li>▪ To minimise the chance for construction workers to come into contact with any contaminated materials, bulk earth-moving excavation equipment should be employed;</li> <li>▪ Contact with contaminated materials can be minimised by wearing appropriate clothing and personal protective equipment such as gloves and masks (especially when working directly with contaminated material), provision of washing facilities and prohibition of smoking and eating on site;</li> <li>▪ Stockpiling of contaminated excavated</li> </ul>	Minimise impacts resulting from excavation and transportation of contaminated materials	Contractor	Project construction site / Throughout construction stage / Until completion of all construction activities		✓	Waste Disposal Ordinance (Cap 354) Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)	



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		<p>materials on site should be avoided as far as possible;</p> <ul style="list-style-type: none"> <li>▪ The use of any contaminated soil for landscaping purpose should be avoided unless pre-treatment was carried out;</li> <li>▪ Vehicles containing any excavated materials should be suitably covered to reduce dust emissions and / or release of contaminated wastewater;</li> <li>▪ Truck bodies and tailgates should be sealed to stop any discharge;</li> <li>▪ Only licensed waste haulers should be used to collect and transport contaminated material to treatment/disposal site and should be equipped with tracking system to avoid fly tipping;</li> <li>▪ Speed control for trucks carrying contaminated materials should be exercised;</li> <li>▪ Observe all relevant regulations in relation to waste handling, such as Waste Disposal Ordinance (Cap 354), Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C) and obtain all necessary permits where required; and</li> <li>▪ Maintain records of waste generation, disposal quantities and disposal arrangements.</li> </ul>							
<b>Land Contamination – Operation Phase</b>									
8.6.2	7.3	<p>The implementation of appropriate mitigation measures for the underground storage tank and pipework, and refuelling activities is required to ensure that risk of land contamination as a result of fuel oil spills or leaks is kept to a practical minimum. Such measures should include the following:</p> <ul style="list-style-type: none"> <li>▪ Adherence to relevant design standards for storage tank and pipework;</li> </ul>	<p>Minimise the risk of land contamination from the operation of underground storage tank and pipework, and refuelling activities</p>	Future user	Project area / On a regular basis / Throughout operation stage			✓	<p>Waste Disposal Ordinance (Cap 354);</p> <p>Waste Disposal (Chemical Waste) (General) Regulation (Cap 354C)</p>

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		<ul style="list-style-type: none"> <li>▪ Regular inspections and maintenance;</li> <li>▪ Underground fuel storage tank should be placed within a concrete pit;</li> <li>▪ Refuelling service area should be concrete-paved;</li> <li>▪ Provision of spill control materials and equipment on site (e.g. absorbent materials, goggles, protective masks, nitrile gloves, disposal bags etc.);</li> <li>▪ If the fuel leakage or spillage occur during refuelling activities, the activities should be immediately stopped; and</li> <li>▪ Fuel leakage or spillage should be contained and cleaned up immediately. Waste fuel oil should be collected and stored for recycling or disposal in accordance with the Waste Disposal Ordinance (Cap 354).</li> </ul>							
<b>Ecological Impact</b>									
9.7.1	8.3	<p><b>Detailed Vegetation Survey</b></p> <p>A detailed vegetation survey should be conduct to update the exact locations, number and condition of individuals of Cycad-fern <i>Brainea insignis</i>, Fortune's Keteleeria <i>Keteleeria fortunei</i> and Ladies Tresses <i>Spiranthes sinensis</i> and any other flora species of conservation interest within the proposed works area prior to the commencement of site clearance.</p>	To ensure no flora species of conservation interest will be affected.	Qualified botanist/ecologist of the ET	Project construction site / For once / Before site clearance	✓			EIAO-TM; Hong Kong Ordinance Cap. 96
9.7.1	8.3	<p><b>Temporary Protective Fence for Flora Species of Conservation Interest</b></p> <p>During construction phase, erection and maintenance of a temporary protective fence enclosing the flora species of conservation interest identified under the detailed vegetation survey is recommended.</p> <p>Monthly monitoring of any other flora species of conservation interest identified in the detailed vegetation survey should be conducted during the</p>	<p>To avoid potential impact on flora species of conservation interest from construction activities such as materials storage;</p> <p>To make sure that the flora species of conservation interest are not affected by the construction activities of</p>	Contractor	Project construction site / Throughout construction stage / Until completion of all construction activities		✓		EIAO-TM



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		construction phase.	the Project						
9.7.2	8.2	<p><b>Precautionary Measures for Butterfly Species of Conservation Interest</b></p> <p>It is recommended to consider inclusion of the common grass species <i>Ischaemum barbatum</i> and <i>Zanthoxylum nitidum</i> in the proposed vegetation planting or the Landscape Master Plan for the Project Site.</p>	To benefit butterfly species of conservation interest Small Three-ring and Swallowtail by providing their larval food plants	Design Architect / Contractor	Project area / During design stage / Throughout operation phase	✓		✓	EIAO-TM
<b>Landscape and Visual Impacts – Construction Phase</b>									
Table 10.11	Table 9.1	<p>CM01: Trees / woodland within the Project Site which are unaffected by the works shall be protected and preserved during the detailed design stage and construction phase. The tree preservation proposals shall be coordinated with the layout and design of the engineering and architectural works at detailed design stage for further retention of individual trees. The preservation of existing tree shall provide instant greening and screening effect for proposed works. Tree protection works will be undertaken in accordance with DEVB TC(W) 7/2015 on “Tree Preservation” and tree risk assessment in accordance with “Guidelines for Tree Risk Assessment and Management Arrangement” by DEVB.</p>	Preserve and protect existing trees	Contractor	Project area / During design stage / construction phase / Establishment Period	✓	✓		<p>EIAO-TM;</p> <p>Protection of Endangered Species of Animals and Plants Ordinance (Cap 586);</p> <p>DEVB TC(W) No. 6/2015 – Maintenance of Vegetation and Hard Landscape Features;</p> <p>ETWB TCW No. 29/2004 – Registration of Old and Valuable Trees, and Guidelines for their Preservation;</p> <p>DEVB TC(W) No. 07/2015 -Tree Preservation;</p> <p>ETWB (2/2007) - General Guidelines on Tree Pruning;</p> <p>GLTMS (12/2013)</p>

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
									- Guidelines for Tree Risk Assessment and Management Arrangement on an Area Basis and on a Tree Basis
Table 10.11	Table 9.1	CM02: If removal of trees unavoidable due to construction impacts, trees will be transplanted where technically feasible in accordance with "Guidelines on Tree Transplanting" by DEVB and HQ/GN/13 and HQ/GN/13 – Interim Guidelines for Tree Transplanting Works under Highways Department's Vegetation Maintenance Ambit where applicable.	Preserve and protect existing trees	Contractor	Project area / During design stage / construction phase / Establishment Period	✓	✓		As above
Table 10.11	Table 9.1	CM03: Construction area control, where possible, to ensure that the landscape and visual impacts arising from the construction activities are minimised. This includes the reduction of the extent and location of working areas to avoid sensitive LRs, siting of offices or temporary structures so that they are not visually prominent, and consideration of detailed schedules to shorten the construction period. Temporary landscape treatments are considered to be adopted such as applying hydro-seeding on temporary stockpiles and areas of earthworks to alleviate the potential impacts and minimise soil erosion.	Minimise landscape and visual impacts.	Contractor	Project area / During design stage / construction phase.		✓		EIAO-TM
Table 10.11	Table 9.1	CM04: Replanting of existing / disturbed vegetation shall be undertaken as soon as technically feasible during the construction phase. The priority shall be areas at the periphery of the site to ensure that proposed planting fulfils its role in mitigating the predicted impacts including screening views of the proposals as early as possible during the operation phase.	Maximise the mitigation effect of the planting to minimise landscape and visual impacts.	Contractor	Project area / During design stage / construction phase / Establishment Period		✓		EIAO-TM
Table 10.11	Table 9.1	CM05: Decorative screen hoarding will be erected along areas of the construction works site	Minimise landscape and visual impacts.	Contractor	Project area – areas adjacent to sensitive		✓		EIAO-TM



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		boundary where the works site borders publically accessible routes and/or is close to visually sensitive receivers (VSRs) to screen undesirable views of the works site. It is proposed that the screening be compatible with the surrounding environment and where possible, non-reflective, recessive colours be used.			receivers / During construction phase.				
<b>Landscape and Visual Impacts – Operation Phase</b>									
Table 10.12	Table 9.2	OM01: Detailed design of development components should reduce landscape footprint and visibility of structures. The area allowed for any development components should be reduced to a practical minimum.	Minimise landscape and visual impacts.	Detailed Designer / Consultants	Project area / During design phase	✓			EIAO-TM; PNAP 152 – Sustainable Building Design Guidelines; Hong Kong Planning Standards and Guidelines; Urban Design Guidelines
Table 10.12	Table 9.2	OM02: The form, textures, finishes and colours of the proposed development components should be compatible with the existing surroundings. Light earthy tone colours such as shades of green, grey, brown and off- white may be utilised where technically feasible to reduce the visibility of the development components, including all roadwork, buildings and noise barriers etc. To further improve visual amenity, natural building materials such as stone and timber, should be preferably adopted for architectural features, where technically feasible.  The proposed use of a responsive design for the disposition of the main elements of the proposed scheme including the locations of buildings and utility structures. Grouping of utilities and infrastructure components into proposed buildings as far as technically feasible to reduce the mass of development. The disposition and height profile of the developments and above	Minimise landscape and visual impacts.	Detailed Designer / Consultants	Project area / During design phase	✓			EIAO-TM; PNAP 152 – Sustainable Building Design Guidelines; Hong Kong Planning Standards and Guidelines; Urban Design Guidelines

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		ground utilities structures to respond to the existing context particularly the existing landform and preserved trees. Proposals designed to minimise the 'wall effects' and create a subtle transition at the edges of the site where it meets the rural landscape. Measures may include the creation of setbacks, articulating the development frontage and maintenance of view corridors to enhance the sense of visual integration with the existing context, avoid abrupt transitions between the existing and proposed built environment and reduce the apparent visual mass of the proposed developments.							
Table 10.12	Table 9.2	OM03: The design of the proposed Engineering Structures such as the proposed road layout and any ancillary structures including the sewage pumping station and the Ma Tso Lung Firing Range should pay particular attention to the appearance and construction methods. The detailed design landscape consultants shall work in unison with the engineers on the aesthetic aspects of the structures and their relationship with the landscape. The design of engineering structures shall avoid any unnecessary visual clutter achieved through the co-ordination of the various engineering disciplines involved to arrive at integrated design solutions.	Minimise landscape and visual impacts.	Detailed Designer / Consultants	Project area / During design phase	✓			EIAO-TM
Table 10.12	Table 9.2	OM04: The proposed treatment of Retaining Wall and Slopes will be undertaken in accordance with GEO Publication No. 1/2011 "Technical Guidelines on Landscape Treatment and Bio-engineering for Man-made Slopes and Retaining Walls". These engineering structures will be aesthetically enhanced through the use of soft landscape works including tree and shrub planting to give man-made slopes a more natural appearance blending into the local rural landscape.	Minimise landscape and visual impacts.	Detailed Designer / Consultants	Project area / During design phase	✓			EIAO-TM; GEO Publication No. 1/2011 Technical Guideline on Landscape Treatment for Slopes; DEVB TC(W) No. 6/2015 – Maintenance of Vegetation and Hard Landscape



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
									Features
Table 10.12	Table 9.2	<p>OM05: All compensatory planting of trees is to be carried out in accordance with DEVB TCW No. 7/2015. A total woodland compensation area of 5.54 ha is proposed. The planting proposals will utilise largely native species in accordance with GLTM/DEVB's - Guiding Principles on Use of Native Plant Species in Public Works Projects. Some compensatory shrub and ground cover planting will also be provided within the woodland area to create a more structurally diverse woodland. 5,869 nos. new trees will be planted as compensation including some 4,317 nos. will be planted within the Project site, 1,400 nos. alongside KNP Road, and 152 nos. to compensate for the existing dead trees to be removed.</p> <p>Woodland areas will utilise a combination of large sized tree stock (including heavy standard sized trees) and whip sized trees to create a more naturalistic effect and screen views of the new structures and buildings.</p> <p>Whip sized tree planting is preferred on the face of soil cut slopes and for general woodland areas where screening is not a priority. The smaller, younger plant stock will adapt to their new growing conditions more quickly than larger sized stock and establish a naturalistic effect more rapidly. Roadside and amenity planting will utilise largely heavy standard sized trees.</p>	Minimise landscape and visual impacts.	Contractors	Project area / During design phase	✓	✓		<p>EIAO-TM;</p> <p>DEVB TC(W) No. 7/2015 – Tree Preservation;</p> <p>DEVB TC(W) No. 2/2012 - Allocation of Space for Quality Greening on Roads;</p> <p>DEVB TC (W) No.3/2012 - Site Coverage of Greenery for Government Building Projects;</p> <p>DEVB TC (W) No.2/2013 - Greening on Footbridges and Flyovers;</p> <p>ETWB TCW No. 6/2015 – Maintenance of Vegetation and Hard Landscape Features;</p> <p>LTM/DEVB's - Guiding Principles on Use of Native Plant Species in Public Works Projects.</p>
Table 10.12	Table 9.2	OM06: Tree planting using larger sized tree stock shall be provided to screen the proposed structures and associated facilities. Wherever possible the planting will utilise native species. This measure will form part of the compensatory	Minimise landscape and visual impacts.	Contractors	Project area / During design phase	✓	✓		As above

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		planting and will improve compatibility with the surrounding environment and create a pleasant pedestrian environment.							
Table 10.12	Table 9.2	OM07: Roadside amenity planting using predominantly native species shall be provided, to enhance the landscape and visual quality of the existing and proposed transport routes and car parks.	Minimise landscape and visual impacts.	Contractors	Project area / During design phase	✓	✓		As above
Table 10.12	Table 9.2	OM08: Creation of new grassland areas approximately 1.02 ha in size. Inclusion of common grass species <i>Ischaemum barbatum</i> and <i>Zanthoxylum nitidum</i> (the larval food plants for butterfly species).	Minimise landscape and visual impacts.	Contractors	Project area / During design phase	✓	✓		As above
Table 10.12	Table 9.2	OM09: Green roofs predominantly using native species shall be introduced where technically feasible on proposed buildings to reduce exposure of untreated concrete surfaces; enhance the sustainability of the design and mitigate visual impact to VSRs at high levels. Location and extent of green roof subject to detailed design.	Minimise landscape and visual impacts.	Contractors	Project area / During design phase	✓	✓	✓	EIAO-TM; PNAP 152 – Sustainable Building Design Guidelines; Hong Kong Planning Standards and Guidelines; Urban Design Guidelines; DEVB TC (W) No.3/2012 - Site Coverage of Greenery for Government Building Projects
Table 10.12	Table 9.2	OM10: Vertical planting shall be introduced using predominantly native species to soften the hard, vertical surfaces of the proposed development components including the walls of the proposed buildings and retaining walls. Planting to utilise climbing and trailing plants. Location and extent of vertical greening subject to detailed design.	Minimise landscape and visual impacts.	Contractors	Project area / During design phase	✓	✓		EIAO-TM; PNAP 152 – Sustainable Building Design Guidelines; Hong Kong Planning Standards and



EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
									Guidelines; Urban Design Guidelines; DEVB TC (W) No.3/2012 - Site Coverage of Greenery for Government Building Projects
Table 10.12	Table 9.2	OM11: Where technically feasible utilise a green paving approach such as grass-crete or grass-grid to maximise the area of planting and reduce the area of hard paving. Location and extent of green paving subject to detailed design. This includes the use of permeable paving where grass-crete / grass grid is not practicable.	Minimise landscape and visual impacts.	Contractors	Project area / During design phase	✓	✓		EIAO-TM; PNAP 152 – Sustainable Building Design Guidelines; DEVB TC (W) No.3/2012 - Site Coverage of Greenery for Government Building Projects
Table 10.12	Table 9.2	OM12: Street and night time lighting glare will be controlled to minimize glare impact to adjacent VSRs during the operation stage.	Minimise landscape and visual impacts.	Contractors	Project area / During design phase	✓		✓	EIAO-TM
<b>Impact of Hazard to Life – Construction Phase</b>									
N/A									
<b>Impact of Hazard to Life – Operation Phase</b>									
11.7.7	10.1	A list of recommendations / good practices are proposed:  1. All DG store should be constructed according to the standards and recommendations by Fire Services Department, having adequate fire-fighting facilities, proper ventilation and fire-proofing requirement.  2. All DGs such as paints and solvents should be stored in their respective DG rooms.	Minimize hazards in the proposed police facility	Project Manager / Project Engineer / Operating staff	Project Area / During design and operation phase	✓		✓	EIAO-TM

EIA Ref.	EM&A Ref.	Recommended Mitigation Measures	Objectives of the Recommended Measure & Main Concerns to address	Implementation Agent	Location / Duration of the measure	Implementation Stages <sup>1</sup>			Relevant Legislation & Guidelines
						Des	C	O	
		<p>3. Adequate fire-fighting equipment, such as fire extinguishers, fire sand etc. should be present during kerosene refuelling operation on the helipad.</p> <p>4. Proper earthing equipment and procedures should be in place to prevent accumulation of static electricity during kerosene refuelling operation.</p> <p>5. GFS kerosene road tanker and the helicopter pilot should follow the established protocol for arriving at the helipad to prevent helicopter crashing on the road tanker.</p> <p>6. Refuelling will only be performed in daytime</p> <p>7. Underground storage tanks will be used for petrol/diesel storage</p> <p>8. Kerosene pump will be equipped with pressure switch to prevent overfilling</p>							

Note 1: Des = Design; C = Construction; O = Operation



**APPENDIX L  
WASTE GENERATION IN THE  
REPORTING MONTH**

Name of Department: ArchSD

## Monthly Summary Waste Flow Table for 2023 (year)

Project : Design and Construction of Kong Nga Po Police Training Facilities

Contract No.: SS K509

Month	Actual Quantities of Inert C&D Materials Generated Monthly							Actual Quantities of C&D Wastes Generated Monthly				
	Total Quantity Generated	Hard Rock and Large Broken Concrete	Bituminous Material	Reused in the Contract	Reused in other Projects	Disposed as Public Fill	Imported Fill	Metals	Paper/ cardboard packaging	Plastics (see Note 3)	Chemical Waste	Others, e.g. general refuse
	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000m <sup>3</sup> )	(in '000 kg)	(in '000kg)	(in '000kg)	(in '000kg)	(in '000 m <sup>3</sup> )
Jan	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Feb	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Mar	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.007
Apr	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.013
May	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.041	0.002	0.000	0.020
Jun	0.988	0.000	0.000	0.000	0.000	0.988	0.000	0.000	0.000	0.003	0.000	0.046
Sub-total	0.988	0.000	0.000	0.000	0.000	0.988	0.000	0.000	0.041	0.005	0.000	0.085
Jul	1.547	0.000	0.000	0.000	0.000	1.547	0.000	0.000	0.000	0.009	0.000	0.065
Aug	4.628	0.000	0.000	0.000	0.000	4.628	0.000	0.000	0.000	0.009	0.000	0.065
Sep	0.306	0.000	0.000	0.000	0.000	0.306	0.000	0.000	0.000	0.004	0.000	0.065
Oct	0.117	0.000	0.000	0.000	0.000	0.117	0.000	0.000	0.000	0.000	0.000	0.111
Nov												
Dec												
<b>Total</b>	<b>7.586</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>0.000</b>	<b>7.586</b>	<b>0.000</b>	<b>0.000</b>	<b>0.041</b>	<b>0.028</b>	<b>0.000</b>	<b>0.390</b>

- Notes:
- (1) The performance targets are given in the Particular Specification on Environmental Management Plan.
  - (2) The waste flow table shall also include construction waste that are specified in the Contract to be imported for use at the site.
  - (3) Plastics refer to plastic bottles/containers, plastic sheets/foam from packaging material.
  - (4) Broken concrete for recycling into aggregates.
  - (5) If necessary, use the conversion factor: 1 full load of dumping truck being equivalent to 6.5 m<sup>3</sup> by volume.



**APPENDIX M  
COMPLAINT LOG**

## Appendix M - Complaint Log

Reporting month: October 2023

Complaint Log Ref.	EPD Log Ref.	Location	Received Date	Details of Complaint	Investigation/ Mitigation Action Status	Status
C001	N07/RN/00020836-23	Kong Nga Po Road (Lamp post GD0470)	29-Aug-23	The complainant alleged that the general construction noise except renovation (within Restricted Hours) from at Kong Nga Po Road (Lamp post GD0470), and commented that "晚上八九點地盤有噪音有人工作". The work sites under complaint are adjacent to the captioned Designated Project area.	<p>Record of Site Investigation Refer to the public complaint which was no mention the certain time, based on daily record provided, CSJV was confirmed that the working period on 26, 27 &amp; 28 Aug 2023 and the working hours were within the approved restricted hour. The equipment applied on the mentioned periods were listed in the Group D of the CNP No. GW-RN0882-23 (Effective date from 24/08/2023 to 23/11/2023)</p> <p>According to the written reply, the Contractor has implemented both the notification of the neighborhood on the schedule of night works and erect noise barriers to screen noisy works for neighborhood. Please be advised that the Contractor is strictly adhering to the conditions of the construction noise permit.</p>	Closed

### Cumulative Complaint Log

Complaint Log Reporting Period	Total no. of Complaint Received
This reporting month	0
From 1st April 2023 to end of the reporting month	1



**APPENDIX N  
SUMMARY OF SUCCESSFUL  
PROSECUTION**

**Appendix N - Summary of Successful Prosecution**

Date of Successful Prosecution	Details of the Successful Prosecution	Status	Follow Up	Total no. Received in this Reporting Month	Total no. Received since Project Commencement
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**APPENDIX O**

**The potential seriousness of the forthcoming  
environmental impacts and the use of  
machineries**

A list of potential environmental impacts	The advice includes, but is not limited to, the following	Consideration of possible alternative methods
<p><b>Visual Impact:</b> The presence of machinery, equipment, and temporary structures associated with ground investigation and plate load testing may have visual impacts on the surrounding landscape, altering the aesthetic qualities of the area.</p>	<p>Screening and Camouflage: Use screening techniques, such as temporary fencing, barriers, or landscaping, to visually conceal the machinery, equipment, and temporary structures from view. This can help minimize the visual impact on the surrounding landscape.</p>	<p>N.A.</p>
<p><b>Noise and Vibration Pollution:</b> The operation of heavy machinery such as drilling rigs, vibratory hammers and air compressors can contribute to noise and vibration pollution, which can disturb local wildlife or sensitive wildlife habitats.</p>	<p>Use of Low Noise and Vibration Equipment: Whenever possible, equipment produces lower levels of noise and vibration should be used. The use of noise barriers around the site can also help to mitigate the impact on local communities and wildlife.</p>	<p>Use of Electric-Powered Equipment: Electric-powered equipment is generally quieter than diesel-powered equipment. Therefore, where possible, using electric-powered drilling rigs, vibratory hammers, and air compressors can help reduce noise pollution.</p>
<p><b>Disturbance of Local Ecosystems:</b> The drilling operations, particularly those involving excavation, can potentially disturb the local ecosystems and impacting biodiversity.</p>	<p>Training and Awareness: trainings are provided for site personal about the importance of minimizing disturbance to local ecosystems, such as minimized noise and light pollution, how to handle waste properly, and what to do if they encounter local wildlife.</p>	<p>Utilizing low-impact construction methods: such as the use of lightweight machinery, minimally invasive drilling techniques</p>
<p><b>Air Pollution:</b> Machinery used in ground investigation and plate load testing, such as diesel-powered drilling rigs and heavy vehicles, can emit pollutants into the air. These pollutants may include Particulate Matter (PM), Nitrogen Oxides (NOx), Sulfur Oxides (SOx), and Volatile Organic Compounds (VOCs), contributing to air pollution and potentially impacting air quality in the surrounding area.</p>	<p>Dust Control Measures: Implement dust control measures such as water sprays, dust screens, or using dust suppression chemicals to reduce particulate matter emissions, and training for all staff on the importance of air quality and measures to reduce air pollution.</p>	<ol style="list-style-type: none"> <li>1. Improved Fuel Efficiency and Maintenance: Promoting fuel-efficient practices and regular maintenance of machinery can help reduce emissions.</li> <li>2. Properly maintained equipment operates more efficiently, resulting in lower fuel consumption and reduced emissions. Implementing fuel-saving measures, such as reducing idling time and optimizing equipment usage, can further minimize air pollution during construction.</li> </ol>
<p><b>Water Pollution:</b> Drilling operations have the</p>	<p>Proper containment and lining of mud pools is crucial to</p>	<ol style="list-style-type: none"> <li>1. Horizontal Directional Drilling (HDD): HDD is a</li> </ol>



<p>potential to contaminate local water sources, particularly if improper waste management practices are used. The method statement mentions the use of a mud pool for temporary storage of retrieved material, which might pose a risk of runoff contaminating local water sources.</p>	<p>prevent contamination. Mud pools should have an impermeable liner, such as HDPE or bentonite clay, to prevent seepage into the ground. Berms can be constructed around the perimeter to contain any overflow. Regular inspection and maintenance of the liner integrity is important.</p>	<p>trenchless method that causes less disturbance to the surrounding environment and mitigates the risk of water contamination. It could be a viable alternative depending on the geology of the site and the purpose of the drilling operation.</p> <p>2. Dry Drilling Techniques: Depending on the geology of the site, dry drilling techniques could be considered. These methods do not use drilling fluids and therefore reduce the risk of water contamination from these sources.</p>
<p><b>Soil Disturbance:</b> The use of heavy machinery can cause soil compaction and disturbance, particularly during drilling operations or movement of equipment. This soil disturbance can disrupt the natural structure and composition of the soil, affecting its ability to support vegetation growth and nutrient cycling.</p>	<ol style="list-style-type: none"> <li>1. Proper Planning and Design: Incorporate soil protection measures into the initial planning and design phase of construction projects. This includes identifying sensitive areas and implementing appropriate construction techniques to minimize soil disturbance.</li> <li>2. Ground Improvement Techniques: Techniques like soil stabilization, grouting, and compaction can help improve the soil's strength and stability, reducing the likelihood of soil disturbance during construction.</li> </ol>	<p>A helical pile is a type of deep foundation system used in construction. It consists of a steel shaft with helical plates or blades that are twisted into the ground to provide support for structures. Helical piles are commonly used in situations where traditional foundation methods are impractical or costly, such as in areas with poor soil conditions or limited access for heavy machinery.</p>
<p><b>Energy Consumption:</b> The operation of machinery requires energy, typically derived from fossil fuels. The extraction, processing, and combustion of these fuels contribute to greenhouse gas emissions and contribute to climate change.</p>	<ol style="list-style-type: none"> <li>1. Training: workers are trained in the importance of energy conservation and efficiency. This could involve instruction on when to turn off equipment, how to use machinery efficiently, and the benefits of energy conservation.</li> <li>2. Efficient Equipment and Machinery: Use energy-efficient machinery and equipment that consume less energy during operation. Regular maintenance and proper calibration of machinery can also improve energy efficiency and reduce energy waste.</li> </ol>	<ol style="list-style-type: none"> <li>1. Prefabrication and Modular Construction: Prefabrication and modular construction methods involve manufacturing building components off-site and assembling them on-site. This approach reduces energy consumption by streamlining the construction process, minimizing material waste, and optimizing energy usage during manufacturing.</li> <li>2. Lean Construction: This methodology helps energy optimization in construction processes.</li> </ol>

<p><b>Waste Generation:</b> Ground investigation and plate load testing may generate various types of waste, including drilling cuttings, excess soil, and construction debris. Improper disposal or management of these wastes can result in soil and water contamination or contribute to landfill usage.</p>	<p><b>Education and Training:</b> education and training are provided to construction workers and staff on proper waste management practices. Raise awareness about the importance of waste reduction, recycling, and responsible disposal methods. Encourage worker participation and engagement in waste management initiatives.</p>	<p><b>Cone Penetration Testing (CPT):</b> CPT is a method of ground investigation that produces minimal waste compared to traditional drilling methods. It involves pushing a cone-shaped probe into the ground and measuring the resistance, which can provide valuable information about the soil conditions with less soil disturbance.</p>
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